Vol. IV March 1909 No. 1

Stout Institute Bulletin

Announcement 1909-1910

Published Quarterly at Menomonie, Wisconsin

Entered as second-class matter November 20, 1908, at the post office at Menomonie, Wis., under the act of July 16, 1894

STOUT INSTITUTE
BULLETIN

ANNOUNCEMENT
1909-1910

Vol. IV. March 1909 No. 1

STOUT INSTITUTE BULLETIN

CATALOG NUMBER

Announcement Stout Institute, 1909-1910

Training School Courses

Manual Training, Domestic Science and Drawing
Courses in Menomonie Public Schools

PUBLISHED QUARTERLY BY STOUT INSTITUTE
AT MENOMONIE, WISCONSIN

DUNN CO. NEWS CO.
PRINTERS
MENOMONIE, WIS.

ANNOUNCEMENT

SEVENTH ANNUAL SESSION

STOUT INSTITUTE

MENOMONIE, WISCONSIN

1909-1910

MANUAL TRAINING, DOMESTIC SCIENCE, HOME MAKING,
DOMESTIC ART, DRAWING, PHYSICAL TRAINING,
BRICK LAYING AND PLUMBING

STOUT INSTITUTE begins the second year of its work, being the seventh annual session of the Stout Training Schools for special teachers, on September 13, 1909. The first semester ends January 28, 1910. The second semester begins January 31, 1910, and ends June 10, 1910.

The holiday vacation begins December 18, 1909 and ends January 2, 1910. The spring vacation begins March 26, 1910, and ends April 3, 1910.

The fourth annual summer session, for which a separate Bulletin is published, begins August 2, 1909, and ends September 3, 1909.

FACULTY

L. D. Harvey, Physchology and Pedagogy; General Superintendent of Professional Work.

Milton College; 1872. High School Principal, 1873-1879; City Superintendent, 1880-1885; Normal Schools, 1885-1898; State Superintendent, 1889-1902; Stout Training Schools, 1903-1908; Stout Institute, 1908-

George Fred. Buxton, Director of Training School for Manual Training Teachers; Design; Organization and Management.

Pratt Institute, 1899; Teachers College, Columbia University, 1904. Teacher of manual training, Newark, New Jersey, 1899-1901; Portland, Maine, 1901-1903; Springfield, Massachusetts, 1904-1905; Stout Training Schools, 1905-1908; Stout Institute, 1908-

Leo. Ammann, Machine Shop Practice.

St. Louis Manual Training School, 1893; Cornell University, mechanical engineering, 1897; Federal Polytechnikum, Zurich, Switzerland, post-graduate work, 1898. Teacher in St. Louis Manual Training School, 1901-1905; Stout Training Schools, 1905-1908; Stout Institute, 1908-

George M. Brace, Joinery, Cabinet Making.

Beloit College, 1891; M. A., 1895. Teacher in high school, Bay City, Michigan, 1892-1895; teacher in high school, Chicago, Illinois, 1895-1900; director of manual training, Janesville, Wisconsin, 1900-1903; Marquette, Michigan, 1903-1905; Duluth, Minnesota, 1905-1908; Stout Institute, 1908-

Wm. T. Elzinga, Pattern Making and Moulding, Forging, Hammered Metal Work.

Apprenticed instrument maker, Amsterdam, Holland, 1887-1891; student Mechanics Institute, New York City, 1902-1903; Machinist and erector, metal pattern maker, and tool maker with several prominent manufacturers, 1892-1903; instructor forge and foundry practice, Pennsylvania State College, 1903-1904; instructor forge and foundry practice, Colorado State College, 1904-1908; Stout Institute, 1908-

Fred L. Curran, Elementary Woodwork, Primary Handwork, History of Manual Training.

State Normal School, Stevens Point, Wis., 1905; Stout Institute, 1908; Bradley Polytechnic Institute, summer 1908. Teacher in public schools, 1898-1903; principal State graded school, 1905-1907; Stout Institute, 1908-

---------- ----------, Mechanical Drawing.

H. W. Jimerson, Plumbing and Gas Fitting.

Journeyman and Contractor, 1884-1904; director Minneapolis School of Plumbing and Heating, 1904-1908; Stout Institute, 1908-

W. H. Heffelfinger, Bricklaying and Concrete Work.

Williamson School of Mechanical Trades, 1905. Journeyman and contractor, 1905-1908; Stout Institute, 1908-

Laura G. Day, Director of Training School for Domestic Science Teachers, Food Materials and Foods, Household Economy and Management.

Kansas State Agricultural College, 1893; post-graduate work domestic science, 1894. Assistant in domestic science and arts department, Kansas State Agricultural College, 1894-1895; teacher of domestic science and arts, Stout Manual Training School, Menomonie, Wis., 1895-1900; special lecturer and director of department of domestic economy, Purdue University, LaFayette, Ind., 1901-1902; Stout Training Schools, 1903-1908; Stout Institute, 1908-

Adele M. Jones, Art Needlework, House Decoration.

City Normal School, Dayton, Ohio, 1904; Teachers' College, Columbia University, 1908. Teacher Dayton public schools, 1904-1906; Stout Institute, 1908-

Wilhelmina H. Spohr, Food Study and Cooking.

Kansas State College, 1897; Stout Institute, 1907. Teacher public schools, Manhattan, Kansas, 1897-1906; Calumet, Michigan, 1907-1908; Stout Institute, 1908-

Lurene Seymour, Textiles and Millinery.

University of Michigan, 1895; New York University, 1905; Teachers College, Columbia University, 1907; Teacher, Lake Linden, Michigan, High School 1895-1898; Decatur, Illinois, High School, 1898-1906; Stout Training Schools, 1907-1908; Stout Institute, 1908-

Zella I. Perkins, Chemistry and Biology.

University of Idaho, 1903; post graduate work, University of Chicago, 1906. Assistant pure food department, University of Idaho, 1903-1904; teacher science, High School, Colfax, Washington, 1904-1905; Stout Training Schools, 1906-1908; Stout Institute, 1908-

Josephine Schiffer, Domestic Science.

Drexel Institute, 1900; Teachers College, Columbia University, 1907. Teacher of Cooking, Girls Classical School, Indianapolis, Ind., 1900-1906; teacher of Domestic Economy, Kindergarten Training School, Indianapolis, 1902-1906; Evening classes in Dietetics in Indianapolis Hospitals, 1902-1906; Dietetics in Chester Co. Hospital, West Chester, Pa., 1901-1907; teacher of domestic economy, First Dist. Agricultural School, Statesboro, Ga., 1907-1908; Stout Institute, 1909-

Anna McMillan, Domestic Art and Domestic Science.

Stevens Point Normal, 1899; Stout Training Schools, 1908. Grade teacher, 1899-1905; teacher of domestic science, Stevens Point Normal School and Grand Rapids Wis., public schools, 1908; Stout Institute, 1909-

---------- ----------, Physiology and Hygiene; Home Nursing and Emergencies.

Josephine Hobbs, Director Stout Training School for Home Makers.

Cook Co. Ills. Normal School, Summer Ses. '94-'97; Y. M. C. A. School of Domestic Science, Boston, Mass., 1906-1907; Teacher in Public Schools, Dubuque, 1898-1906; supervisor domestic science and matron, Moore Street Neighborhood Houses, Cambridge, Mass., 1907-1908; principal Y. M. C. A. training school for household service, Boston, Mass., 1908-1909; Stout Institute, 1909-

Kate Murphy, Director of Art Department, Design and Illustration, House Decoration and Furnishing.

St. Louis School of Fine Arts, 1889, New York School of Technical Design, 1890; New York Studios, 1890-1892; Studeat in European Art Schools, 1908-1909; Director art department, Elmwood Normal School, Farmington, Mo., 1888-9; teacher of drawing in public schools of Chicago, 1893-1894; Menomonie Public Schools and Stout Training Schools, 1894-1907; Stout Institute, 1908-

A. H. Plag, Director of School of Physical Training, Theory and Practice of Physical Training.

Normal School of the North American Gymnastic Union, 1903. Instructor in athletic and physical training in Y. M. C. A., Minneapolis, Minn., 1904-1907; Stout Training Schools, 1907-1908; Stout Institute, 1908-

Julia Bigelow, Assistant in School of Physical Training.

Normal School of the North American Gymnastic Union, 1906. Stout Training Schools, 1906-1908; Stout Institute, 1908-

Grace R. Darling, Librarian.

University of Michigan, 1884; Teachers College, Columbia University, 1892; Wisconsin Library School, Madison, Wis., 1907. Teacher of History and Literature, State Normal School, Oshkosh, Wis., 1884-1891; teacher of History and English, State Normal School, Milwaukee, Wis., 1895-1903; Stout Institute, 1908-

Francesca L. Otto, Secretary and Appointment Clerk.

University of Indiana, 1897; Vories' Business College, Indianapolis, Indiana, 1900. Teacher Latin and German, High School, Bluffton, Indiana, 1897-1900; commercial branches, High School, Marinette, Wisconsin, 1901-1903; Stout Training Schools, 1903-1908; Stout Institute, 1908-

SCOPE AND PURPOSES OF WORK

AT the present time four distinct lines of work are carried on under the auspices of the Institute. They are:

1. The training of teachers for manual training, and for domestic art and science.
2. The training of young women as home makers.
3. The training of young men as trade workers.
4. Experimental work in the field of industrial education.

THE TRAINING OF TEACHERS

THIS work was begun in 1903, by the establishment of the Stout Training Schools. By the organization of Stout Institute in 1908, these schools came under its control. The Training Schools for Manual Training Teachers, and Domestic Science and Art Teachers will retain their organization and continue their work under the management of the Institute. The Training School for Kindergarten and Primary Teachers will admit no more students, as it has been decided to discontinue this school at the end of the current school year.

This step is taken because the establishment of a kindergarten training department of high grade in the State Normal School in Superior furnishes excellent facilities for the preparation of kindergarten teachers for the territory served by the Stout School. This school was organized to train kindergarteners for Northwestern Wisconsin. The state has now undertaken this work, thus rendering its continuance in Menomonie unnecessary.

Its discontinuance gives additional room, already greatly needed to accommodate the rapidly increasing attendance at the two other schools.

The work which each of the two other schools undertakes to do in its field is three-fold---academic, technical, and professional. The academic involves the mastery of the subject-matter of the courses, as a matter of knowledge. The technical involves a mastery of the handwork regarded as valuable for training purposes, as a matter of skill. The professional involves a study of educational principles and processes, and practice in applying them in the organization and administration of work in its particular field of educational effort, and a study of the relation of its special work to other phases of the public school curriculum.

While each of these three phases has a content of its own and receives special treatment, the professional phase permeates the entire work in the other two. It appears in the academic work when students are led to observe and consider their own mental processes; to determine the use to be made of the subject-matter in their subsequent work as teachers, and how they are to use it most effectively. It appears in the technical work as it proceeds when they are led to observe the order of development; to determine whether the particular order followed is essential or not; to note the character and relation of mental and motor activities appropriate and necessary for the proper development of the pupils they are likely to teach.

From beginning to end students are impressed with the idea that they must not only have accurate knowledge of the subjects they are to teach,

and skill in the different phases of handwork, but that they must know how to teach others the things they are learning, and to train others to do well the things they are trained in doing.

While the students taking these courses will have the benefit of a far better equipment than can be provided in most systems of schools, they are trained with reference to the development of power and skill in organizing and carrying on work under such conditions as to equipment as can be supplied easily in a village or city school system.

THE TRAINING OF YOUNG WOMEN AS HOME MAKERS

THE Homemakers' School, designed to prepare young women for the responsibilities of home life was established in 1907. As this is the first school of the kind in the United States, aiming to give a broad training in the practical application of the economic, scientific, ethical and aesthetic principles underlying the art of home making, its organization requires the development of a course of study on new lines, for the realization of a new purpose in the education of girls. This purpose is: To secure a clear conception on the part of the girls being trained, of the character and scope of woman's activities growing out of the proper organization and and administration of the affairs of the home; to secure adequate ideas of what constitutes efficiency in the performance of these activities; and through theory and practice under proper conditions, to secure such efficiency.

In the nature of the case, the work in such a school must be experimental for some time, but the experiments will be closely limited to the field outlined in the statement of the purpose. When ever experience demonstrates that any line or phase of work undertaken, is not directly contributing to the accomplishment of the purpose of the school, such work will be abandoned and other work which promises to be of greater value substituted for it. The problem of what should constitute the body of knowledge used for instructional purposes, and what the particular kinds and extent of practical training in doing, given in the school, was approached in the following manner: An effort was made to determine and formulate the things a woman needs to know and to do in each of certain forms of activity made necessary by her position as homemaker. The forms of activity chosen for consideration were, those connected with the establishment and maintenance of a suitable shelter for the family; those that concern themselves with the nutrition of the family; those that have to do with the care of the dependent members of the family---children, invalids, and aged persons; and those that have to do with the social, industrial, and ethical relations of the members of the family to each other and to other members of society. The results of this formulation were classified under the following heads: The House, Food Study and Cooking, Clothing and Household Fabrics, Care and Nurture of Children, Home Nursing and Emergencies, and the Social, Industrial and Ethical Relations of the Woman in the Home and in Society, and, as thus classified, constituted the course of study.

The character of the work done by the students of the school, their enthusiasm, and the number of persons applying for admission, have fully demonstrated the demand for the kind of training it offers. Lack of room

renders it necessary to limit the number of new students who will be admitted to this school during the year 1909-10. It is expected that additional buildings will be ready the following year, and that the limit will then be removed.

The next bulletin issued will be devoted to the home maker's school.

THE TRAINING OF YOUNG MEN AS TRADE WORKERS

THIS work was begun in September last by the organization of a trade school for plumbers and bricklayers. The purpose in this experiment is not alone to furnish opportunities for young men who may wish to learn a trade, but more than this, to demonstrate what can be done by pupils in public schools toward the mastery of a trade while they are carrying on the regular academic work of the public school system.

It is evident that trade schools as such cannot be organized in the smaller cities, and that if any definite work of value is done even in the beginning of instruction for industrial efficiency, it must be done in connection with the public school system.

A special circular of information concerning the work in the Trade School is issued by the Institute.

EXPERIMENTAL WORK IN THE FIELD OF INDUSTRIAL EDUCATION

THIS work is being carried on for the purpose of determining educational values of various industrial processes as exemplified in the handwork now utilized, or which may be utilized in the instructional work in manual training courses; the scope and character of knowledge of industrial processes, conditions, organization and administration adapted to the needs of those being educated for industrial efficiency: the possibilities of industrial education in existing schools together with the necessary modification of existing ideals, courses, equipment and method, in order to make the industrial phase of education of the highest value.

THE SUMMER SESSION

STOUT Institute Summer Session offers exceptional opportunities for supervisors or special teachers of manual training, domestic economy, or freehand drawing to advance themselves along their special lines either in technique or along the professional side. Superintendents and principals are finding these summer sessions an opportunity for learning something of the content and method of school handwork. Grade teachers are perfecting themselves in handling special subjects through summer courses. Provision is made for outings and games so that a vacation may be combined with a summer course of study. The summer session for 1909 begins August 2d and ends September 3d.

GENERAL INFORMATION

LENGTH OF COURSE

COURSES leading to the diploma granted by each of the training schools for teachers require two years' work. No diploma will be issued to any person who has not been a student in residence for at least one year. Upon the completion of one of these courses,---Manual Training or Domestic Science,---a diploma is issued, which by statute, is made the basis for the issuance of a life certificate, after one year's successful teaching in Wisconsin.

This certificate legally qualifies the holder to teach the subjects in which training has been taken, in the public schools of the state. The certificate is issued by the State Board of Examiners and is accepted in most of the other states.

QUALIFICATIONS FOR ADMISSION

GRADUATION from a four years' high school course or equivalent preparation, will be required for admission to each of the training courses. The candidate must be at least seventeen years of age, and must be possessed of good health and physical energy, of refinement and good character. Testimonials of good character are required.

Students who have had Normal School or Collegiate training will be given credit for such work in the courses they pursue as they have satisfactorily mastered. Successful experience in teaching before entering the Training School, in most cases, reduces the amount of practice teaching required of the student.

GRADUATE COURSES

IN each of the schools a graduate course of one year is offered. These courses are planned to meet the needs of teachers who have had definite training, but who wish to take more advanced work, both technical and professional, than is offered in the regular courses. They furnish excellent opportunities for those who desire to prepare themselves to teach manual training, domestic art and science, in professional schools, or for supervising such work in city systems of schools.

ADVANCE ENROLLMENT

SCHOOL accommodations limit the number of students who can be enrolled; for this reason persons who wish to enter, should make application in advance for an enrollment blank, which should be filled out and forwarded to the school with physician's certificate, and two certificates of good character. Enrollment will be made in the order of application.

THE DEMAND FOR GRADUATES

THE demand for the graduates of the Stout Training Schools as teachers and supervisors of manual training and domestic science and art, comes from all parts of the country and is steadily increasing. They are now employed in twenty different states. During the school year 1907-

1908 calls came to the school authorities for more than one hundred teachers of manual training, a number far in excess of the supply. The calls this year up to the time this bulletin is issued, have been more numerous than ever before.

The call for teachers of domestic science and art is greater this year than ever before, and the growing interest of the public in this work indicates a steady increase in the demand for some years.

The number of graduates from the kindergarten and primary training school has not been sufficient to supply the demand in any year since the school was organized.

Every aid which can properly be given by the officers of the school will be extended to graduates in securing positions.

SCHOOL EXPENSES

TUITION is one hundred dollars per year, one-half payable at the beginning of each semester. A fee of ten dollars per year is charged to cover the cost of materials used by students in the manual training and domestic science departments. Students taking work in any courses not required for graduation, will be charged an additional fee to cover actual cost of material used in such courses.

Board and room can be obtained at prices ranging from four and a half to five dollars per week---in private families.

LABORATORY FEES

IN the science courses minimum fees are charged for laboratory work. The fees for the regular courses are as follows:

General Chemistry - -	$5.00
Food Chemistry and Chemistry of Cleaning	2.50
Biology - - -	2.50
Physiological Chemistry - -	2.50

A few of $2.50 is charged for any elective course in chemistry involving a semester of laboratory work.

In addition to the laboratory fee, students are expected to pay for any breakage which may occur.

DORMITORIES

BERTHA TAINTER HALL accommodates about thirty young ladies. The Hall is furnished with all modern conveniences, the rooms are electric lighted, and heated both by direct and indirect radiation, thus assuring ample heat and good ventilation. A large reception room, a music room, and a reading and study room for those who may prefer to study there rather than in their rooms, are provided. The Hall is three blocks from the school grounds, overlooks Lake Menomin, and is in the midst of spacious, well-kept, well-wooded grounds. It is the aim to make this an ideal home for such students as wish to avail themselves of its accommodations. The home is in charge of a woman of experience and culture, and such regulations and supervision will be maintained as will

insure proper conditions for health, effective work and the proper social life of students.

Tainter Annex, erected last year, accommodates fifty young ladies and is situated on the same grounds with Bertha Tainter Hall. It is thoroughly suited to the purposes for which it was planned. It has a large central living room with two balconies and skylight above, making an attractive place for rest, and social activities. The rooms are all arranged in suits of study and sleeping room for each two students. A large dining room in Bertha Tainter Hall provides meals for both Halls. As the call for accommodations is likely to tax the capacity of both Halls, it will be necessary in most cases for two persons to occupy a room.

The charge for room for the school year for each student, is sixty to eighty dollars according to size and location of room. In most cases the lower rate prevails. Board is furnished to all students rooming in the Halls at three dollars and fifty cents per week.

SCHOOL YEAR

THE school year is thirty-six weeks in length, beginning September 13, 1909, and ending June 10, 1910. Students should arrange to enter at the beginning of the school year if possible. When this is not possible students may enter at the beginning of the second semester.

The summer session is five weeks in length, beginning August 2, 1909, and ending September 3, 1909.

Address all correspondence regarding courses of study or general work of the Institute to

L. D. HARVEY,
President Stout Institute,
Menomonie, Wisconsin.

MANUAL TRAINING SCHEDULE

JUNIOR CLASS

FIRST SEMESTER

	Number of Periods per Week	Number of Weeks
Psychology	5	18
English	5	18
Elements of Design	10	6
Elementary Woodwork	10	18
Joinery	10	12
Forging	10	18
Literature of Manual Training	2	18
Physical Training	4	18

SECOND SEMESTER

Elementary Mechanical Drawing	10	18
Thin Wood Construction	10	9
Paper and Cardboard Work	10	6
Bent Iron Work	10	3
Elementary Woodwork	10	18
Wood Turning	10	12
History of Manual Training	5	6
Physical Training	4	18

SENIOR CLASS

FIRST SEMESTER

Freehand Drawing and Design	5	18
Weaving and Basketry	10	3
Clay Modeling	10	6
Cabinet Making	10	18
Machine Shop Practice	10	18
Literature of Manual Training	2	18
Organization of Manual Training	2	18
Observation and Practice Teaching	6	18
Physical Training	4	18

SECOND SEMESTER

Advanced Mechanical Drawing	10	18
Machine Shop Theory	5	6
Machine Shop Practice	10	12
Pattern Making	10	16
Moulding and Foundry Practice	10	2
Hammered Metal, Pottery or Wood Carving (elective)	10	18
Courses of Study in Manual Training	5	6
Observation and Practice Teaching	6	18
Physical Training	4	18

GRADUATE CLASSES

REQUIRED WORK

Manual Training Theory, Decorative and Structural Design, Graduate Drafting, Practice Teaching.

SPECIAL STUDY

One or more of the following: Psychological and Pedagogical Aspects of Manual Training, Correlations between Drawing and Construction, Architectural and Machine Drafting, Furniture Design, Advanced Woodwork, Advanced Metalwork.

OUTLINES OF COURSES
FOR MANUAL TRAINING TEACHERS

IN order to indicate the aims and scope of work offered for teachers of manual training the following outlines are here presented covering the Handwork for Primary, Intermediate and Grammar Grades, Woodwork and Metalwork for Secondary Schools, Drawing and Design, and Professional Work:

HANDWORK FOR PRIMARY GRADES

PAPER AND CARDBOARD. As a preparation for supervisors of elementary manual training the place of first importance is given to construction in paper and cardboard. Objects are made which seem to bring in the most typical processes of using these materials, and directions are given for the handling of this work in public schools.

Free cutting is given for training in observation and imagination and to bring in the first use of scissors and paste. Thin cover paper is cut and pasted upon a heavier paper.

Card mounts and other single piece problems of heavy material are introduced for the study of proportion and for drill in cutting to line.

The making of booklets begins with the folding of single pieces of paper, then follows the making of folder with cover, and tied booklet with cover, the sewed and the glued booklet.

Bookbinding is given for third and fourth grades and includes the making of portfolio, the repairing of books and the full process of binding a small book.

Envelopes, paper sacks, and filing devices are made, first by folding and cutting, later by measuring and cutting, and finally by laying out to measure.

Boxes are made from heavy tag board and pulpboard, introducing first the folding of lap joints and gluing corners, then the making of boxes with cloth reinforced corners and paper lining. Boxes with fitted covers are made at the close of the course.

CLAY MODELING AND POTTERY. The modeling of type forms and their application to common objects is given as a preparation for modeling from objects, from pose, from photographs and from memory images. Relief ornament is designed and modeled and panels made for casting in plaster. The main feature of the course is the making of pottery, which is the only strictly manual training work in clay.

Pottery is given for classes in the first four grades and consists principally in the making of small hand built pieces of ware involving different kinds of manipulation. Relief and incised decoration are carried out in the making of vase forms. Wheel throwing is illustrated and a few pieces thrown by the class. Molds are made and vases cast to illustrate an important commercial process. A study is made of clays and of glaze materials, matt and bright glazes are mixed, and each student glazes and fires a part of his work.

WEAVING AND BASKETRY. Paper strips are woven to illustrate the making of patterns, and a rug is woven for each of the first four grades, using cotton and woolen yarns and chenille, and working on small wooden looms. Basketry for primary grades consists in making a coiled mat, coiled basket and rattan baskets of different shapes.

THIN WOOD CONSTRUCTION. Problems in selecting, assembling and fastening with glue and brads, strips of thin wood to form miniature pieces of furniture, boxes, bird houses and other small articles are given, with methods of class presentation and ways of preparing materials for class work. Combinations of cardboard and wood are suggested for a few types of construction.

HANDWORK FOR INTERMEDIATE AND GRAMMAR GRADES

WOODWORK FOR FOURTH AND FIFTH GRADES. Work for the grades below the sixth is planned to prepare the student for the conditions, under which the work is usually taught. The only tools used are the block plane, hack saw, coping saw, chisel, bit, knife, carving punch, file, try square, rule and pencil. The principles are taught and the exercises performed in such a manner as to directly lead to the more difficult bench work.

Exercises involving the use of the above tools are presented in such a way as to prepare the student for teaching the simpler wood processes. The models completed in the course are similar to those used in the fourth and fifth grades of the Menomonie public schools, but the pursuance of the course means something more than the production of a series of carefully made models. The prospective teacher in this work should develop habits and powers of observation, scientific thought, mechanical and executive ability, and a reasonable degree of rapidity.

Working drawings are made for a part of the course, and the reading of drawings is made an important feature throughout.

The stock is with few exceptions prepared in thickness before it is given to the student, the dimensions of length and width only being considered. The last few models require a consideration of thickness.

WOODWORK FOR SIXTH, SEVENTH AND EIGHTH GRADES. Work for the upper grades is planned for a room with a rather full equipment of wood working benches and tools. The serious bench work begins in the sixth grade each problem introducing one or more new exercises or involving added difficulty, the whole course being arranged in a sequenced order of steps. The handling of woodwork classes in public schools is the central thought of the course.

Exercises are given in sawing and planing to dimensions, and in squaring up stock. The chisel and gauge are brought into a variety of uses in the making of straight and curved models. The brace and bits are used for different kinds of work, the spoke shave and other special tools are used for such constructions as call for them. Different joints and methods of fastening are taught and several pieces are finished with stains and polished. For a part of the course articles are designed, drawn and constructed by the students.

BENT IRON AND SHEET METAL. The course in bent iron gives pupils of the elementary schools a first acquaintance with the handling of iron as a material of construction, enabling them to learn something of its properties and typical uses. The meaningless scrolls that made up the design in most Venetian iron work of a few years ago are not used, but an attempt is made to use the material in both decorative and structural ways, consistent with the nature of the material.

The principal operation consists in bending these strips of soft iron ribbon with the straight or the round nose pliers into such shapes as are desired, and fastening two or

more pieces together with small iron binders which are clamped around the pieces. Riveting is also introduced as a means of fastening the work. The principal decorative piece is the lantern, with top and bottom of taggers sheet iron, suspended by a chain to a small bracket of bent iron work. The bridge truss as a typical structural piece is made and tested, and the student proves the value of the proper disposition of the material used.

POTTERY AND CEMENT. The elementary pottery for primary grades is continued in more advanced work in the making of decorated pieces for upper grades. Cement work includes a study of the properties of the different compositions, and the making of arches, bridges, piers, walls and tiles on a small scale.

WOODWORKING FOR SECONDARY SCHOOLS

JOINERY is planned for the first year's work in high schools, and is arranged according to difficulty of tool operations. A series of joints important to the carpenter and cabinet maker is made and applications are pointed out. The work in the cabinet making course, which follows this course, brings many of the joints into use in constructions. A part of the joints are sawed to a fit and a part of them are chiseled. Each student in this course is expected to develop an ability to saw a joint accurately and to plane and chisel to fine dimensions and close fits. The course includes:

Planing exercise—squaring up stock to required dimensions. Sawing exercise—making cuts at different angles to the surface of the stock. Chiseling exercise—with the grain and at angles. Butt joints—different types of fastening as used for different classes of work. Lap joints—for different classes of work, spliced joints, mortising exercises, mortise and tenon joints, dovetail joints, house framing exercises, joining edges of boards in different ways, polishing exercises.

CABINET MAKING. Instruction is given in the application of joinery to the making of furniture, tool chests, cabinets of different kinds and general interior finish by means of bench and mill work and discussions of the problems of the cabinet maker.

A small stand is made as a type,—each student designing, drawing, tracing, blue printing, making mill bill, getting out stock, cutting to size, smoothing surfaces, fitting joints, assembling, staining, and polishing. Pieces of board are treated in several ways to show different effects of stains and polishes. Cabinet making problems involving accurate tool manipulation, thorough knowledge of woodworking machinery, and ability to use wood finishes make up the balance of the course. Instruction is given in the proper handling of a cabinet maker's equipment of bench tools, in the care and use of the swing saw, circular saw, band saw, jointer and surfacer, and the special tools in the mill equipment at the Institute. Suggestions are given for carrying the work on in schools where woodworking machinery is not available.

WOOD CARVING. Exercises in wood carving are given to develop facility in handling carving tools and to give an acquaintance with the cuts involved in grooving, in sinking backgrounds and in modeling curved surfaces. Finished pieces are worked out which become parts of constructions. The aim is to train in the application of design to the decoration of wood constructions.

Units of ornament are worked out in soft wood, first in straight and then in curved line designs. Book stall ends are designed and carved in simple curves varied from the Greek anthemion; small desk pieces such as blotting pads, ink stands, and pen trays are worked out in low relief carving or inlaid decoration; as panel for cabinet or box

involving considerable surface modeling, a piece is designed, carved, and finished; a table leg, pedestal support, or piece of modeling from life, or photograph or cast, is carved in the round. Kinds of treatment adapted to geometrical designs, conventionalized natural forms and purely naturalistic features are illustrated. As the ability to teach carving depends principally upon the appreciation of good design and ability to use the carving tools, little time is given in this course to class room method and logical sequence but attention is concentrated upon the development of ability in carving.

WOOD TURNING is given for second year high school classes although it may be introduced into the first year if there is a desire to push the work down from the upper years. The course covers exercises planned to give a familiarity with both turners' and pattern makers' work and introduces power machinery. Attention is given to correct position of the body, manner of holding the tools, correct use of tools, methods of sharpening, dangers to avoid.

A series of exercise pieces is made in soft wood, bringing in the turning of cylinders, cones, stepped cylinders, V grooves, circular grooves, beads and reverse curves, turned between centers. This is followed by face plate and chuck work and a fitting exercise. Hardwood applications of turning exercises include tool handles, mallets, ring, ball, and pieces designed by the student. Work in preparation for pattern making includes the making of several pieces between centres and on the face plate by scraping, and a few simple turned patterns. Students are required to take proper care of lathes and tools, and to observe the application of those principles necessary for the successful teaching of wood turning. Good qualities to look for in a lathe are pointed out.

PATTERN MAKING is taught in connection with Foundry Practice and leads directly to Machine Shop Practice. Patterns are made in the wood shop and molded in the foundry. Castings are finished in the machine shop. The aim of the course in pattern making is to give an acquaintance with tool processes and methods of construction, shop kinks and considerations necessary to successful molding. The rules for draft and shrinkage, and methods of preventing irregular crystalization of cast metal are explained and applied, and the importance of constantly considering the molding process and the finishing in machine shop is impressed upon students. The method of applying and the reason for using different kinds and colors of varnish are explained.

The first part of the course is confined to bench work, beginning with one-part patterns, involving straight cutting, making draft, setting rib with glue and brads, laying out and cutting for green sand core, sand papering and shellacking; then taking up curved cutting, the use of leather fillets, and the making of core prints and core box. Next two-part patterns are introduced, bringing in the use of draw knife, rasp, and file, the gluing up of joint with paper, splittling joint doweling, fitting core prints, making two part core box for same and using black shellac for core prints and core box.

After the above bench work the course involves lathe work, at first by itself and then in connection with bench work; cylindrical turning is followed by irregular turning and the use of templates, fitting of spokes, building-up and chucking.

GRADUATE WOODWORK. Opportunity is furnished for those taking advanced work who wish to do extra work in cabinet construction, wood carving, wood turning, or pattern making.

METALWORKING FOR SECONDARY SCHOOLS

FOUNDRY PRACTICE. Patterns finished in the wood shops are taken to the molding room and students are given acquaintance with molding processes and the management of a foundry, core making

and the use of cores, the mixing of irons and the handling of a cupola. A part of the molding is done before taking up pattern making, in order that the patterns may be made with a clear understanding of their use and mistakes avoided. The main part of the course follows the pattern making and tests the correctness of the patterns, demonstrating the necessity for carefully considering draft, shrinkage, machining and coring in the making of patterns.

Words and terms peculiar to the work are explained and used. The characteristics a good moldihg sand are shown and sand is prepared for use. Different kinds of molding are explained. Simple one-part patterns are molded, followed by patterns involving green sand cores, then two-part patterns, simple core work, balanced cores, and more difficult work molding in two and three-part flasks. Instruction is given in the use of molder's small tools, the cutting of gates, the running of vents, the setting of cores and the clamping of flasks; also in the making of core mixtures and the proper use of the core oven; the lining of ladles, repairing, daubing and charging of cupola; the mixing of iron for definite uses, melting, tapping and pouring into molds; shaking out the molds and cleaning castings.

FORGING. Appliances are described and their operation explained before beginning work at the forge. The uses and care of tools and materials used in forging are considered in class talks. The necessary processes of working iron and steel, are taught together with their applications in practical work. The basic operations of forge practice are taught through the making of a number of exercise pieces and finished articles. After each principal exercise opportunity is given for practice upon a problem which involves an application of the exercise.

The sequence of operations follows:

Building fire, cutting cold iron with hardie, heating metal, taking proper position in relation to anvil, holding work with suitable tongs, striking correctly, drawing round bar to square, drawing square bar to round.

Upsetting stock on end, using heading tool, chamfering, swaging with top and bottom swage, cutting thread.

Bending and scarfing, scarf-welding two ends of a ring, and ends of two pieces. Upsetting stock in the middle, bending and making square corner outside and inside, laying out bracket, using center punch and hot punch.

Fullering with top and bottom fuller, splitting with hot cutter, spreading in heading tool, shaping irregular curve, drawing out to point.

Drawing out two parts to fit each other, drilling, riveting, grooving.

Manipulation of tool steel, hardening, tempering and annealing, twisting, pointing, sharpening.

Use of flatter and hot cutter on tool steel, grinding and tempering for cutting different materials.

Forming and hot punching tool steel for cross pene hammer, polishing faces, hardening and tempering face and pene with one heat.

The above exercises are applied to more difficult work in tool smithing or to decorative work involving the designing and executing of such objects as lamps, hanging lanterns and irons, fire place tools, gates or grilles.

An important feature of the course is the requirement that each student shall do some practical work in the way of repairing equipment or keeping the tools and appliances of the shop in good condition. The purpose of this is to give a training in shop management that will aid the student in solving problems that will come up in his later work as a shop instructor and manager.

MACHINE SHOP PRACICE. The gaining of a correct and systematic method of attacking the problems of the machinist is the object of the course in bench and machine tool work. Fundamental operations of the modern machine shop are covered through the making of a number of pieces of work involving the typical use of a number of tools. The course consists largely of exercises which are of no value as

finished pieces, but which teach in the quickest possible time the most important processes in machine shop practice.

The general scope of tool processes follows:

Cylindrical turning, taper turning, turning curved shapes, work on speed lathe, thread cutting and making standing bolts and nuts.

Turning to different kinds of fits, chuck work, face plate work, boring and use of reamer, finishing work on mandrel, square and angular cutting on shaper, cutting key way on shaper, finishing large surfaces on planer, cutting sliding fits on planer, cutting, surfaces, angles and T slots on milling machine, gear cutting, brass turning, threading and knurling, drilling on drill press, use of cold saw, grinding on cutter grinder, use of wet tool grinder, chipping, filing and scraping, use of hand taps.

MACHINE SHOP THEORY. Lectures, demonstrations and discussions of topics related to machine shop practice make up the theoretical side of the course. This course is conducted largely in the machine shop and covers the equipment, processses and shop mathematics necessary to the successful handling of public school shop classes.

The course covers a study of the following topics:

Tools and supplies—selection and purchase of machine tools, small tools and general supplies.

Machine equipment, erecting and installing—study of cost and adaptability of machine tools, location of shafting, setting of machines, selection of belting.

Theory of cutting tools—rake, clearance, setting tool for different classes of work, special shaped tools, chattering.

Cutting feeds and speeds—definitions, method of finding cutting speed.

Taper turning—definitions, setting over of tail, center, use of compound rest, use of taper attachment, taper turning lathe, boring tapers, cutting taper threads; testing tapers.

Thread cutting—definations and formulas, selecting change gears, grinding and setting threading tool, swivelling compound rest, cutting threads, measuring and testing threads.

Taps and drills—selection of taps and dies, drill sizes for given sizes of taps, clearance of twist drills, holding drill in chuck, grinding drills.

Gear cutting—systems and classes of gears, selection of cutters, centering cutters, indexing, cutting spur, level, worm, and spiral gears.

Grinding and grinding machines—advantages of grinding, speeds and feeds, keeping work cool, use of cutter grinders.

Use of formulas—in determining sizes and amounts of cutting in various operations

HAMMERED METAL WORK. Decorative work is given in copper and brass, problems being worked out so as to bring in typical operations in the handling of sheet metal. Sheet sterling silver of several gauges is on hand for students who wish to inlay or make jewelry or tableware. Attention is directed to the making of good forms, to good workmanship, and to suitable decoration and surface effects. The first part of the course may be carried on by schools with meagre equipment, the more difficult pieces following requiring a number of additional tools and parts of equipment.

The following processes are covered in the course.

Hammering against a block of wood, into a hole, and over a stake.

Surface marking.

Decoration by means of repousse work.

Sawing outlines of pieces, and pierced designs.

Engraving simple design.

Riveting joints, corners, hinges and fastenings.

Soldering with hard and soft solder.

Etching, inlaying, and enameling.

ADVANCED METAL WORK. Graduate students may elect to do advanced work in the machine shop, making and assembling parts of machines, or to do special work in hammered metal and enameling.

DRAWING AND DESIGN

FREE HAND DRAWING. Practice is given in free hand perspective and the representation of type forms as a preparation for making pencil and blackboard sketches of manual training projects. Attention is given to the development of a good technique, and students are directed to study examples of good drawing.

PRINCIPLES OF DESIGN. Lectures are given on the principles and practice of design, with suggestions for the handling of design in connection with manual training classes in public schools. The aim is to give students a basis for criticisism of applied arts products, to develop taste, and to establish a theoretical foundation for practice in design. Blackboard sketches and lantern slides are used to illustrate the talks, which cover the principles of art and their application to design; rules for design; suggestions for appropriateness of design to use, materials, and type of construction; study of outlines, fastening and ornamentation; special considerations necessary for working in paper, textiles, ceramics, wood and metal.

GENERAL DESIGN is given during the junior year and furnishes practice in illustrating principles of design, and prepares for the applied design of the senior year. The work is done principally in pencil and good execution is required.

A study is made of the rectangle and its subdivision into interesting proportions by vertical and horizontal bands, by borders, and by slanting features.

After each series of sketches a selection is made and used as a basis for lines of emphases in a finished drawing of a box, or cabinet, or other construction based upon the rectangular prism.

Following this, a study is made of different kind of lines, applications being made to free non-rectanglar forms, and also used as parts of decorative ornament.

Natural forms are conventionalized and fitted to different shaped areas.

Units of historic ornament are studied and appropriate applications pointed out.

Types of structure are examined and made the basis of a series of designs of practical problems.

HISTORY OF ART AND DESIGN. Lectures are given on the development of the arts to familiarize students with the historic setting of types of construction and ornamentation that have influenced present designers and interior decorators. Attention is first directed to the development of architecture and decoration and the historic styles in furniture, then the pottery and metal work of various peoples are considered, European tendences in design are noted, the art crafts movement is reviewed, and American tendencies in design are discussed.

APPLIED DESIGN. Typical problems for manual training classes are worked out in different mediums. Thought is directed constantly to the application of principles of design to constructions and to the necessity for considering the adaptability of the construction to public school classes. The course consists partly of a study of methods of construction of typical projects, partly in refinement of proportions, and partly in the application of ornament. Full sequences of models for courses of study in the different materials are planned by senior students for assigned grades.

Problems are worked out in the making of designs for paper boxes and booklets, and other problems in paper and cardboard construction.

Designs are worked out for coiled raffia baskets, rattan baskets, and rugs with simple border designs.

Bent iron designs are made for decorative projects and for illustration of structural use of material.

Jars, inkstands, trays, bowls and vases are sketched for pottery classes.

Constructions suitable for elementary woodwork are drawn for different grades and with a variety of constructive features.

Furniture design includes chairs, tables and case-work, suitable for high school classes.

Designs for gavels, pedestal bases, and table legs are made to illustrate necessities for wood turning design.

Decorative forging and hammered metal furnish opportunities for the design of lamps and brackets, stands and grills.

DECORATIVE AND STRUCTURE DESIGN. Design work of a somewhat different nature is required from graduate students. The work presupposes adequate preparation in freehand and in mechanical drawing. The aim is to present the necessities of structure for different materials and uses as a basis for design, to show the application of principles of design to different types of construction, and to indicate ways of teaching applied design in manual training classes in public schools. The work is an elaboration of the manual training design given in the regular courses. Emphasis is laid upon a high quality of drawings made to illustrate the successive topics.

GRADUATE DRAWING AND CONSTRUCTION. For those taking graduate work who expect to teach freehand drawing and design as well as constructive drawing and shop work, opportunity is furnished for charcoal, pen and ink, pencil, and water color representation and design, and suggestions given as to the planning of a correlated course in the manual arts.

GRADUATE FURNITURE DESIGN. Graduate problems in furniture design and interior decoration are given with a consideration of structural elements in their best proportion; followed by applications of the panel and the curved line. A part of the work includes a study of applied ornament. All drawings are dimensioned and finished with a carefully executed wash.

ELEMENTARY MECHANICAL DRAWING. A course of drawings is given that will enable students to acquire: (a) proficiency in the use of instruments, (b) knowledge of the conventions and methods in drafting room practice, (c) acquaintance with elementary geometrical constructions, (d) an understanding of orthographic projection and development, (e) ability to make working drawings of shop models.

The first drawings are in pencil and are suitable for the seventh and eighth grades, where the instruments used are few and simple and the theory of projection is not explained. This work includes the making of exercise sheets and working drawings.

The remaining drawings are finished in ink and are suitable for high school classes.

Sheets of lines, letters and figures are given to develop ability in the use of a full set of drawing instruments.

This exercise work is followed by several sheets of geometrical constructions.

The subject of projection is made the principal feature of the course. Students are made familiar with the meaning of planes of projection and their use in making working drawings, kind of projection, angles of projection, the elements of descriptive geometry, and methods of teaching projection to high school classes. Drawings are made of geometrical solids in different positions, and of developments of intersections.

ADVANCED MECHANICAL DRAWING. The aim of this course is to meet the demands upon teachers in those schools which aim to prepare their students for higher technical schools or for drafting room practice and for those giving a general course in mechanical drawing.

The course includes:—(a) advanced work in projection, a study of perspective, and simple work in shadows, (b) sketching machine details and making machine drawings, (c) drawing architectural details, plans, and elevations, (d) working out a course in mechanical drawing.

Lettering and drafting conventions.

Projection at double angles, projection of rregular curves, projection of shadows.

Perspective parallel to picture plane and at angles to picture plane, projection of perspective scheme, perspective of room interior and of cottage exterior, topographical perspective, and perspective of cast shadows.

Development of helix and application to V and square threads, conventional threads, bolts, and nuts.

Heart cam and irregular cams, spur gears, and stand of gears.

Details of machine parts, assembly drawing of machine.

Floor plan of frame building, front and side elevations, construction details, and heating system.

Tracing and blue printing.

GRADUATE MECHANICAL DRAWING. Projection and perspective drawing in their various phases are taken up thoroughly and some of the more difficult geometrical problems are also worked out. Methods of work having the most general application are kept to the front, but alternate methods and checks are continually pointed out. The aim is to develop an ability to handle easily the high school work in drawing, to be able to solve any drafting problem that is likely to arise, and to see the application and value of technical ability acquired.

The following indicates the scope of work:

Intersection of sphere and cone. Intersection of two cones.

Perspective of house with cast shadow. Perspective of cylindrical, conical and spherical solids.

Cycloids and trochoids. Approximate involutes.

Involute gearing, single curve. Involute gearing, double curve. Bevel gearing.

Detail measured machine drawing. Assembly machine drawing—from details.

Construction details of panel, door, drawer, shelving. House framing details. Stair details.

ARCHITECTURAL AND MACHINE DRAFTING. For students taking graduate work who desire to specialize along the lines of either architectural or machine drafting, an opportunity is given to become acquainted with the general conditions underlying each of these fields. Detail drawing, planning and assembling each has a place in this course.

Architectural Drafting—The heating, lighting, plumbing and ventilating of a modern dwelling is studied through assigned reading, lectures, and the making of diagrams; a study of the different orders of architecture and lessons in architectural design, architectural principles including room arrangement and conveniences, a comparison and critism of different house plans with regard to cost, provisions of specifications, etc., and a short review of laws governing building and sanitation preparatory to the making of complete plans, and working details, specifications and estimates of cost of a modern two story frame dwelling.

The principles of brick, stone, cement and steel construction are taken up and drawings made of types of construction that will involve the use of one or more of these materials.

Machine Drafting—Elements of machine design are taken up and a study made of steam or gasoline engine drawing, electrical machine parts, machine tool construction,

etc., in such a way as to enable teachers to carry ont shop problems in the making of patterns and machining and assembling of parts for such machines, according to modern shop theory and method.

PROFESSIONAL COURSES

PSYCHOLOGY AND PEDAGOGY. This work is taken at the beginning of the junior year and is limited to a consideration of principles, fundamental in character, and to the application of these principles in the actual work of teaching. Time will not permit the study of psychology as a culture subject. The students who have so studied it, but have not given consideration to the application of its fundemental principles in teaching, will need to take the prescribed course.

Special attention is given to the psychology of attention, habit, and will. Those principles of pedagogy are considered which may be shown to have a practical application in the teacher's work. In the academic, shop, and laboratory work, it is the aim of the teacher not only to have students master the special work under consideration, both from the academic and the technical standpoints, but at the same time to consider the work from the standpoint of the teacher. Practical exercises are given throughout the course requiring a conscious application by students in their work of the psychological and pedagogical principles studied.

OBSERVATION AND PRACTICE TEACHING. During the senior year students are required to systematically observe the work of experienced teachers in conducting classes in their respective lines of work in the public schools. The observation work is under the direction of members of the training school faculty. The observation required is not simply a "looking on;" the teachers in charge direct the attention of the observers to definite aims, methods, and results.

Methods of different teachers in the instruction and control or classes are studied, not to be copied, but to determine how far they are based on sound pedagogic principles. The work under observation is discussed by those observing and the teachers in charge of the observation classes. Weaknesses are pointed out and the reasons for the weakness shown from a pedagogic standpoint. The strong work is noted and the reasons for its strength discussed. The aim is to make students familiar with the application of psychological and pedagogical principles through a careful observation of the various ways in which these principles are applied by different teachers in different phases of the work. After the observation work has been continued for a reasonable time, students are put in charge of classes and are given practice in teaching in different grades. Before beginning practice teaching in any grade, students are required to thoroughly familiarize themselves with the work outlined in the course of study for that and lower grades and by observation of the class, to determine what progress has been made in the course and what are the next steps in order. Before taking charge of the classes, they are required to prepare definite plans indicating the proper order of procedure. The practice teaching is done under the supervision of the special teacher of the particular line of work in which the instruction is given. In the class work of the regular teachers in the training schools, an effort is made to bring into the consciousness of the students the pedagogical principles upon which the work there is based.

ORGANIZATION AND ADMINISTRATION. By means of lectures, discussions, essays, and written reports, the problems of organizing. teaching, and supervising manual training are brought out, and through making outlines, schedules, and tables, the work is systematized for practical use. A brief consideration of educational doctrine is taken as

a foundation for a study of specific aims of manual training. The selection of problems, which shall contain proper disciplinary value and at the same time give a fund of usable knowledge is made a feature of the course, and suggestions are given for adapting courses to a given community.

The course covers the following topics:

Educational theory, important for the teacher of manual training.

Scope of manual training for public schools, cultural and practical features, kinds of school work desirable.

Qualifications of the special teacher.

Organizing courses, making schedules of classes, and planning equipment.

Keeping records, making reports, and filing information.

Getting up exhibitions and lectures and arranging printed matter.

Preparation for daily lessons, determining purposes and subject matter, making lesson plans, getting tools and stock ready for use.

Teaching manual training, individual and class instruction, testing and drilling, setting of definite standards, systematizing the handling of classes.

Laying out courses for others to teach, selection of teachers, conducting teachers meeting, visiting classes, and holding conferences.

Unifying of entire subject matter and relating it to regular school course.

HISTORY OF MANUAL TRAINING. The aims of this course are: (a) To trace the adjustments of the schools to changing social needs, (b) to follow the growth of the manual training movement, (c) to get a broad view of education and of manual training, (d) to establish a basis for an understanding of the present educational and industrial needs of our country, (e) to study the present social, industrial, and economic conditions in order to determine what forms of industrial education are required.

The following topics are studied:

Early educational history.

Pestalozzi, effect of his work, comparison with other educational reformers.

Education in Germany and France with reference to manual training.

The manual labor movement.

M. Victor della Vos and the Russian system of manual training.

Uno Cygnaeus, Otto Salomon, and the Sloyd movement.

Manual training in England, Denmark, and Switzerland.

General survey of manual training and technical education throughout Europe.

Introduction of manual training into the United States—Centennial Exposition, 1876, John D. Runkle, Gustaf Larson, C. M. Woodward, Henry H. Belfield.

Growth of manual training in the United States.

Present conditions of the course of study.

Industrial tendency in education—its cause and its demand upon the manual training schools. Comparison of vocational, trade, and technical schools.

JUNIOR LITERATURE OF MANUAL TRAINING. A thorough study is made of the three following books: Salomon,---The Teachers Handbook of Sloyd; Woodward,---The Manual Training School; Sickels,---Exercises in Woodworking.

Students are required to analyze and review each of the books. Discussions cover the scope of the reading and an understanding of principles and practice in manual training suggested in the reading.

SENIOR LITERATURE OF MANUAL TRAINING. With the conviction that the student of manual training should become acquainted with its literature, a large number of publications are read and reviewed. The theory of manual training, drawing, shop processes, and methods of teaching are covered during the course.

Oral and written reviews are required of books containing matter pertaining to the industrial aspect of education, books dealing directly with manual training, magazine articles relating to public school handwork, and published reports of associations.

Books reviewed cover the following subjects: General pedagogical matter, the Sloyd system, technical processes, mechanical drawing, design, arts and crafts.

Magazines of education, magazines dealing especially with manual training, art and technical matters, and school publications are reviewed.

Educational reports reviewed include: reports of association meetings, state educational reports, federal department reports, reports of commissions, reports from foreign countries.

COURSE OF STUDY IN MANUAL TRAINING. By means of a study of manual training exercises, sequences, and general practices as indicated in school catalogs and circulars, and after becoming familiar with the recent history of manual training and its diverse aims in different localities a course of study is planned for public schools involving a variety of materials and processes, and yet with a continuous aim and carefully graded steps. The practicability as to teaching in public school classes is made an important element in determining the value of any educational scheme of hand work.

MANUAL TRAINING THEORY. Research and experimental study of the more important aims of educational hand work and of the general practice in public schools, is offered to graduate students.

Conditions of mental growth and the effects of definite hand work upon these conditions form the background for a study of nerve structure and action, habit, the relation of physical to mental training, the relationships between mental traits, the adaptation of manual training problems to pupils of different interests and abilities, and social aspects of industrial art work. Conferences and reports on assigned readings will be the preparation for a final theme which will treat fully one of the foregoing topics.

In connection with the public school classes of the city of Menomonie, where a thorough course in manual training, from the kindergarten through the high school, is given, opportunity is offered for a systematic observation of all phases of constructive work and drawing.

MANUAL TRAINING EQUIPMENT. The aim is to enable students to solve some of the problems that must be considered in planning, equipping, and maintaining a manual training room or building in an efficient and economical manner under any special set of conditions.

The work is carried on through lectures, required reading, class discussions, and the making of plans and drawings of buildings, rooms and fittings, and the working out of specifications and costs of tools, supplies, and general equipment. Following are the problems taken up and the topics considered:

Fitting up a woodworking shop in a public school building.

Planning a manual training building to meet special needs.

Arranging benches and machines in the various shops.

Designing the following to be built or fitted up in the school: General tool closet, lumber storage room, finished model closet or cabinet, tool panel, joinery bench with drawers or tool rack, blue printing apparatus, drawing table, cabinet for drawings,

rack for iron and steel stock.

Selecting general equipment from dealers.

Selecting tools for the various shops in building previously planned (see Bulletin of the Stout Training Schools, August, '06.)

Estimating costs of tools and equipment in various shops (see Bulletin S. T. S. August, '06.)

Selecting tools and supplies from dealers; reliable dealers in manual training supplies; the best sources,—manufacturer, wholesale dealer, and local firms.

Estimating costs of materials used in various subjects (see Bulletin S. T. S. February, '07, and May, '07.)

GENERAL SUBJECTS

ENGLISH. Presentation of such phases of composition work as will give the student a command, both in speaking and writing, of simple, correct and clean-cut English, is the aim of this course. The special topics considered vary with the needs of particular classes, but in general they may be designated as: grammatical forms; sentence structure; choice of words; social and business correspondence; the preparation and organization of literary material.

The work is closely correlated with that in other departments and is based on long and short themes, talks, discussions, and papers presented by members of the classses.

A special feature of the work in English is the training in oral exposition and description. The tools and materials used, processes employed, and products completed in the construction work furnish many of the topics for these exercises. This work is continued throughout the course for the purpose of developing ease, facility, and accuracy in the students' subsequent use of English as a teacher in the class-room.

ELECTIVES. Work in literature, or courses selected in the domestic art or science or in drawing will be taken as the equivalent of one hour daily throughout the course. In the selection of electives, students will be expected to advise with and secure the approval of the director of the training school.

PHYSICAL TRAINING. Regular work in the gymnasium and natatorium is taken throughout the course unless students are excused by the director for cause. A short period each day is given to exercises and games, and work on the apparatus is given once a week.

Stout Institute Athletic Association encourages basket ball and base ball and puts out teams each year.

OUTLINES OF COURSES

DOMESTIC SCIENCE TEACHERS

DOMESTIC SCIENCE, DOMESTIC ART AND DOMESTIC ECOMOMY are the various terms that are applied to the lines of work here grouped under Domestic Science. The term is not satisfactory, but is used because it is the one more often used and more generally understood to include the full range of subjects than the others. The scope of the subject matter here outlined covers the following points: Foods and their uses, cooking, general science, sewing, millinery, textiles, drawing and house decoration, emergencies and home-nursing, household management, and professional subjects.

FOODS AND THEIR USES

FOR a knowledge of foods and their uses to be of practical benefit in improving dietary conditions, it is necessary that there be a thorough understanding of food stuffs which will lead to intelligent selection, combination, and preparation of foods and a thorough understanding of the physiological requirements of food in the body.

This practical knowledge is obtained in the following courses of study by a careful consideration of food compositions, digestibility, ease of assimiliation, specified food values, etc., and by a consideration of the industrial aspect of food production, including the factors that influence food value, appearance, and cost.

Professional value is given by a full and systematic scheme for food study that will furnish a teacher available information without the necessity for collecting it from various sourses of information.

FOOD STUDY. A classified and systematized study of foods and food stuffs, giving authorities used in preparation of material and being permanently recorded.

The cell—definitions, single cell, tissue cell, cell nutrition.

The organism as developed from the cell—single cell, tissue, organs, systems, organism.

The cell in the body—kinds, nutrition, special functions.

Food—definition; classification according to chemical compositions in organic and inorganic; classification of organic into proteids, carbohydrates, fats; classification of inorganic into mineral salts, acids, water.

Food in the body—digestion, a brief study of the organs of digestion, digestive juices, action; proteids, their chemical and physical properties influencing digestion, absorption, circulation, assimilation, excretion, storage; carbohydrates considered in same way as proteids; fats—same, mineral substances and acids; water.

Food stuffs—The various materials in the market must be stndied with reference to obtaining a usable knowledge of the preceding material. That this may be done, food materials are grouped as follows—cereals, vegetables, fruits, nuts, meats, milk, eggs, condiments and spices, and the various products derived from these natural materials. The following phases of each are studied; composition and structure, digestion, food value, botany, distribution, cultivations, manufacture, transportation and storage, cost, selection, influence of preparations.

DIETETICS. The purpose of this course is to give an understanding of the relation of a study of foods, food chemistry, physiology, physiological chemistry, and food preparations to the preparations of diets for normal conditions existing in the family and for the preparations of invalid dietaries. It also given an organization of material for use in teaching.

Foods—a review of food study and food chemistry.

Physiology of foods—a review of the physiology of nutrition and a more specific consideration of digestion, absorption, assimilation, excretions.

Food in health—diet as influenced by age, infancy, from two to six, six to twelve, twelve to sixteen, sixteen to twenty-two, mature life, middle life, old age; diet as influenced by habit of life, school child, mature student, sedentary occupation, vigorous physical occupation, outdoor life; diet influenced by climate and season, cold climate and season, warm climate and season, modification from one to the other.

Food in disease—diseases of the stomach, intestines, circulatory organs and blood, liver, kidneys, nervous system, fevers, colds, etc. In each case a study of peculiar conditions is made and diet is modified to suit requirements.

COOKING

FOR convenience in arrangement, the course in cooking may be divided into three subjects, plain cooking, cooking and serving as conducted in the senior year, and invalid cooking. While it is impossible to classify all of the work under these three heads, this arrangement will give an idea of the lines of work conducted in each year of training. The training value of these lines of work and the professional aims are nearly the same, the practical purposes differing with the subject. The practical purpose may be stated in general terms as an effort to show the relation of science and practice, to teach the art of cooking, to develop skill and judgment in the use of materials, to develop correct ideals of neatness, order, system, economy, and habits that will be valuable in attempting to realize these ideals. The professional aim is to show the development of the subject as teaching material, to show adaptations to school purposes, methods of presentation, and training value.

PLAIN COOKING. The following topics indicate the scope and give the sequence of the work.

Preparations of food principles—experiments in action of various agents upon proteid, carbohydrates, fats; application in the simple cooking of eggs, rice and corn starch, bacon and butter.

Methods of cooking—use of dry and moist heat, baking, boiling, frying, steaming, etc., application in simple cookery.

Cooking of carbo-hydrates—general statement of purpose; changes due to use of dry and moist heat; preparation of sago, tapioca, rice, cereals, starchy vegetables.

Cooking of fatty foods—same as above.

Cooking of proteids—similar treatment.

Food combinations and general cookery—batters, doughs, cereals, beverages, soups, meats, poultry, fish, eggs, spring and fall vegetables.

COOKING AND SEWING in the senior year is conducted in the same way that plain cooking in the junior year is conducted. The foods prepared are more elaborate in composition and preparation though no effort is made at fancy cooking. Attention is directed to food combinations and the correct service of foods and to marketing with reference of cost materials and food returns.

Food preparation—cakes, pastry, salads, ices and ice creams, puddings, desserts, canning and preserving, general cookery.

Garnishing and decoration—of foods, salads, desserts, etc.; of table and dining room, preparations of place and menu cards.

Serving of meals—lunches at a given cost, luncheons, breakfasts, dinners; meals of ceremony, dinners, high teas, banquets, refreshments for various entertainments.

INVALID COOKING is given for the purpose of teaching the preparation and serving of food for the sick and the adaptation of diet to disease.

Gruel—barley, oatmeal, arrowroot.

Broth—beef tea, mutton, chicken.

Soups—cream, fruit.

Beverages—tea, coffee, cocoa, lemonade, toast-water, sodas, fruit syrups.

Eggs—nog, poached, shirred, etc.

Toasts and twice-baked breads.

Jellies—gelatine with fruit juices and wines Koumiss.

Cereals—correct preparations for invalid.

The invalid tray—laying of tray, garnish, china.

GENERAL SCIENCE

SCIENCE courses here outlined are not designed to give the student a comprehensive knowledge of the fundamentals of the subjects studied and are not detailed science courses in the usual sense of the term. Only such phases of the different subjects are dwelt upon as find application in practical home management, and such fundamentals are taught as are necessary to an understanding of these applications. The aim in teaching is not professional but to give a basic understanding of the relation of science to the practical matter of the home.

PHYSIOLOGY. This course of study is planned for the purpose of teaching the student of the human body the functions of its various organs with special reference to the physiology of nutrition and the maintenance of a healthy organism. It also shows a systematic arrangement of the subject matter and the organization of a course in physiology suitable for eighth grade and high school pupils with the best methods of presentation.

The human body as an organism made up of cells, tissues, organs.

The amoeba—its manner of growth, nutrition, excretion.

The body cell—cell activity, interdependence, food requirements.

Blood manufacture—digestion, digestive juices, absorptions, assimilation, excretion, hygiene of digestion.

Blood—its composition, physical properties.

Circulation—organs, systems.

Lymphatic system—blood modification, influence in blood composition.

Skeleton—structural frame work, bones, joints.

Muscles—voluntary, involuntary, activity.

Respiration—organs, influence upon oxidation, hygiene.

Skin—structure, functions.

Kidneys—structure, functions, selective power.

Nervous system—structure, functions, activities.

Senses—touch, taste, smell, sight, hearing, voice and speech.

INORGANIC CHEMISTRY deals with such phases of general chemistry as are essential to an understanding of food chemistry rather than to an understanding of general fundamentals. The following are the principle topics considered:

Matter—kinds, changes, properties, forms, elements, compounds, mixtures.

Chemical reactions—definition, conditions superinducing, characteristics, quantitative aspect, proportions, equations.

Water—compositions by volume, by

weight; properties—chemical and physical; solution—kinds, states, circumstances affecting, characteristics, application of theory of electrolytic dissociation; purification—boiling, filtration, distillation, chemicals, oxidation, city purification.

General outline—elements considered as metals and non-metals; compounds composed of metallic and non-metallic oxides; bases—nomenclature, definition, in terms of ion theory, formation, reactions; acids—nomenclature, definitions, reactions; salts—nomenclature, definition, formation, reactions.

Atomic theory.

Determination of atomic weights—determination of equivalent, molecular weights, deduction of atomic weights.

Valence.

Periodic law of the elements.

FOOD CHEMISTRY is essential to the understanding of food materials and the reactions which occur in their preparation for use. The course is planned to give this scientific basis for the practical work and to emphasize the essential materials by the analysis of a complete food.

Carbon compounds—hydrocarbons including the aliphatic series of paraffines, olefines, acetylenes, alcohols, ethers, aldehydes, ketones, acids, esters, and the aromatic compounds made up of the benzene series and the derivatives of benzene; fats; carbohyrates—the monosaccharides, hexoses, mannose, dextrose, levulose, galactose—the disaccharides, sucrose, lactose, maltose—the polysaccharides, starches, gums, cellulose.

Nitrogen compounds—proteids considered according to Webster-Koch classification, alkaloids.

Mineral compounds.

Proximate analysis of milk; ash, moisture, fat, carbohydrate, proteids.

FOOD ADULTERATIONS. Following the course in food chemistry, this course is considered an important adjunct to it. The object is to give the student information concerning the common adulterations and the foods in which they most frequently occur.

Classes of adulterants—preservatives, coloring matter, substitutions, artificial essences, mineral compounds.

Foods commonly adulterated—milk, butter, olive oil, lard, sugar, syrups, flour, baking powder, canned products, ketchups and sauces, fruit extracts.

Testing foods for adulterants.

PHYSIOLOGICAL CHEMISTRY. Prerequisites to this course are the ones in food chemistry and physiology. The aim is to show the chemical reactions within the body and the results of these reactions.

Human body—gross structure; internal structure of respiratory organs, alimentary canal, circulatory and lymphatic systems; cell structure, composition, necessary foods; tissues and secretions, blood, various fluids, muscles, nerves, bones, fat.

Foods required by the body.

Processes of digestion—mouth digestion provides mastication, solution of foods, diastatic action and involves a consideration of the salivary glands, their kinds, location, secretions and of saliva, its composition, properties, diastatic action, limitations, agents retarding—stomach digestion includes a study of the glands of the mucous membrane, kinds, occurrence, character of secretion; secretions, their composition, conditions exciting flow, influence of blood, etc.; action of juices, conditions retarding and promoting, rapidity; special action of pepsin, rennin, gastric lipase—intestinal digestion includes a similar study of the pancreatic juice, intestinal juices, and bile.

Paths of absorption of digested foods—lacteal or lymphatic system as carrier medium, necessary conditions, foods absorbed, changes during absorption; the portal system as carrier medium, process, foods carried, changes in food during process.

Metabolism—constructive, conveyance of foods to cell, importance of capillaries, building up of absorbed foods into living tissue; destructive, decompositions of foods and liberations of energy, disposal of waste materials.

Products of metabolism—tissues and secretions, excretory products, source of muscular energy, heat equivalent of some common foods.

BIOLOGY shows the relation of cell growth, nutrition, and activity to organic development. The particular phase of biology emphasized is bacteriology, the purpose being tp show the influence of simple forms of life such as bacteria, yeasts, molds, etc. upon food materials, the human organism, and sanitary conditions surrounding both.

Life—its purpose in the organization of materials.

Protoplasm—physical and chemical nature, occurrence, properties, tests.

Cell—unit of organization, occurrence, size, shape, composition, physiology of parts, advantages and purposes of cell structure.

Cell activity—osmosis, plasmolysis, turgidity, tissue tension.

Cell growth—ametotic and mitotic formation, stages in nuclear division and cell division from mother to daughter cell, differentiation of cells into tissue, regions of growth, necessary conditions.

Reproduction—sexual, asexual, meaning, development.

Heredity and variation.

Bacteria—form, size, shape, method of growth, rapidity of growth, spore formation motility, classification, occurrence, conditions necessary for growth. Effects of bacterial growth demonstrated in the laboratory. Distribution of bacteria may occur through soil, water, air, foods. Methods of combating them are sterilization, use of preservatives, desinfectants, cold storage. The theory of germ diseases is discussed under the following topics, channels of infection, susceptibility, desinfectants, deodorizers, antiseptics, heat, light. The formation of toxins and use of anti-toxins is illustrated in various diseases.

Yeast—characteristics, classifications, conditions for growth, occurrence, use, combating wild yeast, fermentation and its effects.

Molds—nature of growth, when it grows, appearance, structure, reproduction, classification, germination of spores, methods of combating.

Mildews—kinds, place and time of development, method of reproduction, how checked.

Smut—their harm to grains, history, effects upon plant tissue.

Rusts—wheat rust as a type, history, effects.

Higher fungi—brief discussion showing economic relations and importance.

SEWING

THE courses is sewing have a two-fold purpose, the first being to present a systematic, well-developed course of instruction that shall develop judgment and skill on the part of the student. The second purpose is professional, being to give a content from which courses of study may be organized and to show the development of the subject matter, its teaching possibilities, methods of presentation, and class management. The complete course includes model sewing, plain sewing, dressmaking, and art needle work.

MODEL SEWING includes a course in the making of models of the various steps in sewing to be preserved as illustration material in teaching. Applications of the models are made upon articles of use and simple garments.

Canvas work—samples of the various stitches, running, basting, etc.; applications to mats, bags, handkerchief cases, any small useful article upon which stitches may be used.

Hems and hemming—paper and cloth models of straight, square corner, and mitred cornered hems; application on small pillow case or sheet.

Ruffles and bands—practice ruffle set into band, application on small apron.

Darning—weaving on cardboard to show warp and woof; stockinet darn on model, on worn stockings; cloth darns on models showing straight, bias, corner, patched darn; damask darn—diagonal, herring-bone, diamond, square, figured; applications made on worn garments and in ornamental darning on crash for pillow covers, table runners, center pieces. Where ornamental darning

is used, pupils make their own designs.

Patching—patches of various shapes, round, square, hemmed, etc.; matching of stripes and plaids; application to garments.

Linen work—plain and fancy hem stitching, simple drawn work, pattern weaving in borders; applications to towels and household linens.

Flannel work—seams of various kinds, opened and catch stitched, felled, bound; fancy stitches—feather stitch, coral stitch, chain stitch, blanket stitch; patching on flannel; use of binding ribbon.

Button holes—on muslin with round corners, barred corners, overcasting; on wool with round corners, tailored corners; eyelets and loops.

Sewing on buttons, tape hooks and eyes.

Trimmings for white work—tucking, rolled edge, putting in insertions, laces, embroideries, fancy stitches used for trimming.

Application of preceeding points to model underskirt made half size.

PLAIN SEWING consists of the making of a four-piece set of undergarments and any other simple garments for which there may be time. The garments are standard size, drafted to measures, and show in their finishing an application of the steps taught in model work.

DRESSMAKING. The purpose here is to teach the art of dressmaking---the use of a system of drafting by which patterns and designs are made, the designing of ordinary garments, the use of line, proportions, color and adaptation of materials and to develop neatness, accuracy, self reliance, originality, and high ideals of work. The professional ideal is also kept in mind.

Shirtwaists—draft of plain shirtwaist and sleeve to different measurements in order to learn use of system; design of shirtwaist patterns in paper, three designs made to specific directions, two original designs; tailored shirtwaist designed and drafted from individual measurements; models of sleeve placket and cuff; cotton shirtwaist made from preceeding designs and models.

Skirts—drafts of seven gored, nine gored, flared skirt made to specific measurements; wash skirt made from designs and patterns from actual measurements; flounces designed in paper from specific measurements, fitted, circular, pleated, two originals; skirt designs in paper in full lengths with pleats in sides, tucked skirts with solid tucks and box pleated backs, pleats set in below hips models of seams on woolen cloth-bound; felled, lapped, pressing of seams; woolen skirt made from patterns designed and drafted from actual measures and application of models.

Silk or wool waist—design and draft from actual measures; selection of materials and trimmings; cutting, fitting, and finishing of waist.

Morning dress of gingham, percale, or linen—patterns and designs made to individual measurements and to suit individual style.

Afternoon dress of batiste, dimity, or other thin material—same as above.

ART NEEDLE WORK is planned to give training in the application of a knowledge of design and skill in fine needle work to the finishing or decoration of articles of clothing or house furnishing. The different lines of art needle work are considered under the heads given below and worked out upon articles chosen by the students.

Characteristics of design suited to various lines of needle work.

Design—adaptation to particular line of needle work.

Articles suited to kind of finish or decoration.

Materials suited to finish, decoration, design.

Study of materials—source, selection, combination, cost.

Needle work stitches and finishing.

Kinds of work—hem stitching, darning, applique, cross stitch, scallops and dots, Wallachian, cut work, eyelet, Bermuda fagoting, French embroidery, drawn work, Irish crochet.

MILLINERY

IN THE treatment of fall and spring millinery, an opportunity is given to develop skill in the handling of materials and taste in their selection and combination, as well as to teach the art of designing, making and trimming hats. In the professional treatment of the subject. emphasis is placed upon equipment, materials, prices, best places to obtain.

Fall millinery—wire work including preparation of wire, bandeaux, buckles, frame making; renovating and cleaning of velvet, felt, feathers, lace, ribbons, chiffon; tinting by the use of gasoline and oil paints, colored powder and chalk; making of bows in tissue paper; proportions in hats; study of styles, making comparisons with preceding seasons; remodeling; sources and value of materials used in hats; millinery stitches—fly-running, back stitch, saddler's lacing; preparation of folds, points, ears, rolled hem, and other trimmings; wiring; making of buckram frame from original design; making, covering, trimming, and lining of winter hat; discussion of selection of materials and cost.

Spring millinery—study of styles, discussion of materials, remodeling of old hats, review of frame making, making of street hat including wire frame, covering, straw sewing, trimming, finishing; making of lingerie hat from embroidery, lace or net.

TEXTILES

THE purpose of this course is to give a practical understanding of the various textile fibres and processes of their manufacture that shall lead to judgment and taste in selections suited in wearing quality, adaptibility to use, permanence of color, and harmony of design to the particular use for which they are intended.

Development of preparations of fibers—spinning, its history, processes, present methods; weaving, early forms, movements in weaving, kinds of looms; weaves and kinds of cloths in which used, plain, twill, sateens, rib, basket.

Study of fibers—vegetable fibers, plumose, cotton, flax, hemp, jute, ramie; animal fibers, silk, wool; mineral fibers, asbestos.

Cotton—distribution and production as influencing quality and cost, steps in handling, operations in milling, products of milling, characteristics, adaptations to use, prices, wearing qualities.

Flax—practically same as above, adding a comparison of linen and cotton in price, appearance, and wearing qualities.

Silk—characteristics, treatment of cocoon, milling operations, artificial silks, milling products, same points as in cotton.

Wool—practically same as silk.

Dyeing—definition, effect upon fibers, elements, color, mordant, assistants.

DRAWING AND ART WORK

Lines of work include the subjects and modifications of subjects needed by the student to carry on practical applications of house planning, furnishing, use of design, use of color.

MECHANICAL DRAWING consists of a course of exercises that will enable the student to acquire a knowledge of the principles of projection and perspective with the application of these principles to working drawings.

The course consists of sheets of lines, letters and dimensions, projection of solids, projection of prism at angle, projection of prism at double angle, perspective of prism, perspective of chair and table in room, working drawings of tables, drawings of cabinets, drawings of cupboards, plans of rooms including school kitchens, house plans, house elevation, room development.

DRAWING AND DESIGN include such principles of design, color, and sketching as are needed in carrying out the lines of work. Only work having direct application is undertaken as the purpose is practical rather than professional.

The course includes:

Drawing—life and object, still life studies, selected from objects to be used for illustration, life from the human figure.

Design—spacing and proportion, the use of stripes, plaids, squares, oblongs, triangles, circles; surface design—spots, borders, stencils, block printing, embroidery, applique, darning.

Color—composition, harmony by analogy and contrast.

Millinery—drawing frames, bows, trimmings; original designs, color combinations.

Garment making—sketching from life and object; underwear, design and trimming; costume designing, proportions, color comcombinations.

Blackboard illustrations—presentation of subject matter.

INTERIOR DECORATION AND FURNISHING. The purpose of this course is two-fold, to prepare students to create an artistic home environment, and, out of their knowledge of the basic principles of art and good design as applied to interiors, to evolve a course of study that can be successfully carried out in public schools under present conditions and find direct application in the homes of the pupils.

The general course of study follows:

Design—nature applied to design, historic ornament, original designs and adaptations; applied design—wall decorations, stencils, block work.

Color—composition, harmony, light, physical effects, psychological effects.

House planning—for convenience, for artistic effect. Each pupil is required to plan a house of a given number of rooms at a given cost and must carry out her plans in detail, showing floor plans, elevations, and views of the interior, showing color schemes, decorations and furnishings.

House decoration and furnishing—color combinations suited to design and use; finishes for walls, floors, woodwork; textiles used for floor coverings, hangings, curtains, cushions; ornaments—pictures, pottery, china, bric-a-bac; furniture—use, materials, form and ornamentation.

PROFESSIONAL SUBJECTS

IT IS necessary that the students understand the professional as well as the practical and economic bearing of the subject. Many of the training possibilities of the various lines of work are emphasized in the regular course of instruction, attention being called to the mental processes involved, the specific training value, the organization of material, the presentation of subject matter, using the regular class work to illustrate processes. The actual organization and handling of public school classes of different grades gives opportunity to acquire, at first hand, knowledge of the stages of development of pupils of different ages.

The professional work may be included in the following general topics, psychology and pedagogy, observation and practice teaching, a study of the organization and management of classes, and of the organization of courses of study and planning of equipment.

PSYCHOLOGY AND PEDAGOGY---See under Manual Training Outline of Courses for scope of work.

OBSERVATION AND PRACTICE TEACHING. Throughout the senior year teaching is carried on under the supervision of a critic teacher. Different lines of work and different grades are handled according to definite plans and in accordance with regular public school discipline and ideas of individual development.

GENERAL ORGANIZATION AND MANAGEMENT. The following course has as its aim the working out of the relation of the subjects of instruction included in a complete domestic science course and the indicating of the peculiar training possibilities of each line of work as well as the organization of the practical information needed by a teacher in introduding or conducting the work.

History and status of Domestic Science in schools.

Practical and educational purposes in its teaching.

Scope of the subject; sciences--chemistry, physiology, biology, physics; art—use of color, design, house decorations, designing of costume, etc.; economies—relation of home to surroundings, social and industrial.

Place in course of study—relation to other lines already taught, sequence of work as determined by psychological and physical principles.

Planning of courses of study—influence of environment, development of pupil, possibilities of school system.

Organization of classes--records, attendance, standard of class marking.

Presentation of subject matter—preparation for lesson, lesson plan, preparation of materials; presentation, theoretical treatment, method of conducting, practical application.

Study of equipment; rooms—plans, dimensions; furnishings—kinds, cost, where obtained.

Cost of maintenance.

The special teacher—attitude toward other lines of work, relations with regular teachers, supervision and conduct of teacher's classes.

GENERAL SUBJECTS

Under this head are grouped subjects that do not logically fall under the other main headings.

EMERGENCIES AND HOME-NURSING. This course gives the practical treatment of simple ailments of tne human body and methods of handling emergencies that may occur in the home, the school, or elsewhere.

The sick room—location, furnishing, ventilation, care.

Beds and bed-making—lifting and handling patient.

Baths and bathing.

Obseration of temperature, respiration, pulse, administration of medicines.

Local applications—plasters, poultices, blisters and other counter-irritants, hot and cold compresses.

Contagion and disinfection—infectious diseases, modes of propagation, fumigation and disinfection.

Emergencies—fainting, drowning, scalds and burns, frost bites, hemorrhage, sprains and fractures, poisons and antidotes.

Bandaging.

Study of diseases—tuberculosis, typhoid fever, colds, etc.

HOUSEHOLD MANAGEMENT furnishes an opportunity to assemble the numerous lines of instruction and fields of experience necessary to administer the affairs of a household into one general course. The primary practical purpose of this line of work is to show the relations of science, art, economics, and practical application.

Because of the scope of the subject and the necessity for little equip-

ment in its teaching, household management presents greater teaching possibilities than many lines of instruction. The development of the subject, its training value, and methods of presentation are included as a part of the instruction.

For convenience in consideration, the general subject may be subdivided as follows:

House sanitation—location, construction, heating, ventilation, lighting, plumbing and drainage, cleaning and cleansing agents.

House furnishing correlates closely with the work in household decoration and furnishing, carrying the theoretical suggestions into practical application in selections and estimates of costs. The furnishings considered include floors and floor coverings, wall finishes and covers, curtains and draperies, furniture, fittings and utensils—china, silver, linen, crystal, utensils.

Business organization—apportionment of income for food, shelter, clothing, education, charity, culture; household expense accounts; system in management of work and business; purchasing of materials.

Social, industrial, and ethical relations—labor in the home, the home as a factor in disbursement, the individual's relation to the home organization, the moral obligations of the home to society.

ENGLISH as given in connection with the Domestic Science courses is designed to aid the student to overcome bad habits of speech and writing. Oral topics relating to the special subject form the nucleus of the recitation work. For written work, daily paragragh themes illustrating various methods of presentation and exposition are required for the larger part of the course, outlines for all oral topics are prepared, and at least one long theme is written. In the paragraph theme attention is paid to matters of punctuation and correctness of idioms rather than to grace of style.

PHYSICAL TRAINING. Opportunity is offered to students for physical training in regular classes in the gymnasium and natatorium.

ELECTIVES. Literary readings, work selected from the manual training or drawing courses will be taken as the equivalent of one hour daily throughout the course. In the selection of electives, students will advise with and secure approval of the director of the department.

DOMESTIC SCIENCE SCHEDULE

FOR OUTLINE OF COURSES SEE PAGES PRECEEDING

JUNIOR CLASS

FIRST SEMESTER

	Number of Periods per week	Number of Weeks
English	5	18
Psychology and Pedagogy	5	18
Mechanical Drawing	3	18
Inorganic Chemistry	6	18
Food Study	5	18
Sewing—Model	4	18
Cooking	6	18

SECOND SEMESTER

Physiology	5	12
Home Nursing and Emergencies	5	6
Freehand Drawing	6	18
Organic Chemistry	6	18
Food Study	5	18
Sewing—Model	4	18
Sewing—Plain	3	18
Cooking	4	18

SENIOR CLASS

FIRST SEMESTER

Household Management	5	18
Biology	6	14
Dressmaking	6	18
Millinery and Art Needlework	4	18
Testiles	2	18
Cooking	6	18
Household Decoration (optional)	10	18
Observation and Practice Teaching		18
Cardboard Construction (optional)	4	18

SECOND SEMESTER

Dietetics	4	12
Organization and Management	4	6
Physiological Chemistry	7	18
Food Adulterations	2	12
Dressmaking	6	18
Millinery and Art Needlework	4	18
Cooking and Serving	6	18
Household Decoration (optional)	10	18
Observation and Practice Teaching		18
Primary Handwork	4	18

GRADUATE CLASSES

Science, Dietetics and Dressmaking, Professional Work, Interior Decoration and Home Furnishing.

MANUAL TRAINING

COURSE OF STUDY IN THE MENOMONIE PUBLIC SCHOOLS

GENERAL SCOPE AND PURPOSE

MANUAL TRAINING in the public schools of Menomonie is continuous from the kindergarten through the high school, and furnishes a broad experience in using a number of materials and tools, and a good acquaintance with fundamental processes of handwork.

The main purpose is to furnish a general training of hand and eye, and a wide familiarity with industrial activities, but it is also one of the purposes in Menomonie to give something of a direct fitting for occupations calling for skilled handwork. To meet this aim, a beginning was made two years ago in the two upper classes of the high school course, by offering trade courses of two years length, an hour and a half per day. Students have elected drafting and machine shop practive during these two years in place of the regular manual training courses formerly offered. This year opportunity is offered to high school students to elect trades in the Stout Institute Trade School, and several high school students are now carrying on plumbing and bricklaying courses.

It is proposed to add courses for grade pupils this year along with the regular manual training courses. The aim will be to test the value of trade instruction in the upper grammar grades for boys who may leave school at the close of the eighth grade. These experimental courses in the grades for 1909-1910 will include: thirty-six weeks of problems in practical carpentry for the sixth grade, six weeks of practical repair work, twelve weeks of tin smithing, and eighteen weeks of brick laying and concrete work in the seventh grade; eighteen weeks of plumbing, and eighteen weeks of cabinet work in the eighth grade.

Through a study of the processes underlying several fields of manual occupation, an acquaintance is given with some of the conditions necessary to success for those who may be attracted towards these lines of work upon leaving school. Kinds of exercises are chosen which will open up typical phases of work in wood and metals, paper, textiles and clay.

The work is so planned that each exercise supplies the training necessary to properly begin the next exercise, and so that each problem requires the best concentration of effort the people is able to give. A familiarity with the principles of construction is acquired, and an effort is made to develop in each pupil an ability to design and to appreciate good design.

A course in constructive drawing is carried on in connection with all the tool work. Originality is encouraged in so far as it remains within the bounds of appropriate form, and the pupil's capability as developed by preceding exercises.

The underlying idea in the course is to present a certain amout of prescribed work, involving such fundamental and related operations as seem

necessary for the pupil's best development. Accompanying the prescribed work, opportunity and encouragement are given to each individual to show his originality and to exercise his inventive ability, either in making a variation of the models or in the form of free work.

FIRST GRADE

PAPER AND CARDBOARD

PAPER and cardboard work is given ten half hour periods per week for eighteen weeks. It involves the use of book, cover, and wrapping papers, and tag board and is carried on without the use of rule measurements.

I Free cutting.
  1. Pose of teacher, child, or animal.
  2. Illustration of stories and representations of games.
  3. Implements of trade and workmen at typical occupations.

II Folding.
  1. Pocket folders of two folds, three folds and four folds.
  2. Booklet folder.
  3. Envelope.

III Folding and cutting.
  1. Lamplighters.
  2. Square box.
  3. Pin wheel.

IV Folding, cutting and pasting.
  1. Envelope.
  2. Small paper sack.
  3. Large paper sack.

V Cutting heavy material.
  1. Post card.
  2. Picture mount.
  3. Book mark.

VI Making booklets.
  1. Octavo and duodecimo booklets.
  2. Book of color schemes.
  3. Book of drawings.

CLAY

Clay work is given ten half hour periods per week for ten weeks. It includes clay modeling as a study of form and simple pottery as an industrial subject.

I Applications of type forms.
  1. Sphere, and apple.
  2. Ellipsoid, and lemon.
  3. Cylinder, and can.
  4. Rectangular prism, and trunk.
  5. Triangular prism, and house with pitch roof.
  6. Pyramid, and house with square roof.

II Study of pose.
  1. Teacher or pupil.
  2. Animal.

III Tile work.
  1. Leaf, flower, or tree in relief.
  2. Straight line pattern incised.

IV Pottery.
  1. Low round dish with rounded edges.
  2. Dish with sharp edges.
  3. Original bowl.

RAFFIA AND WEAVING

Raffia and weaving work is given ten half hour periods per week for eight weeks. It involves the handling of new material and a variety of manipulations differing from those used in clay work or in paper work.

I Raffia work.
  1. Coiled rope mat sewed with raffia.
  2. Raffia net.

II Weaving.
  1. Small mat (5"x5") of yarn, plain colors.
  2. Mat with two or more colors. (Supplementary)

SECOND GRADE

PAPER AND CARDBOARD

THE materials used and processes included in paper and cardboard work in the second grade are similar to those in the first grade, with the addition of rule measurements of inch and half inch. The work is given five half hour periods per week for eighteen weeks.

I Measuring, folding, and cutting.
  1. Book of units of design.
  2. Laundry list.
  3. Weather record.

II Cutting heavy material to measure.
  1. Blotter pad.
  2. Picture mount.
  3. Cover for glass.

III Making booklets.
  1. Paper portfolio with reinforced back.
  2. Receipt book, 16 mo.
  3. Note book, reinforced back.
  4. Scrap book, press board covers.

IV Making boxes.
  1. Square box with laps.
  2. Rectangular box.
  3. Box with double sides and ends.

CLAY

Clay work is given five half hour periods per week for ten weeks. It includes clay modeling from common objects, modeling from pose and from photograph, modeling of ornament, and coiled pottery making.

I Modeling from objects.
  1. Boxes, books, and ink stands.
  2. Fruits and vegetables.
  3. Flowers and leaves.

II Study of pose.
  1. Child.
  2. Dog or rabbit or cat.
  3. Photograph of animal.

III Ornament in relief.
  1. Straight line border design.
  2. Straight and curved line border.
  3. Curved line border.

IV Pottery.
  1. Bowl.
  2. Low dish.
  3. Candle stick.
  4. Flower pot.

BASKETRY AND WEAVING

Basketry and weaving work is given five half hour periods per week for eight weeks. The coiled Indian basket is discussed, designed, and made. Designs are worked out for borders of small rugs.

I Basketry.
  1. Circular coiled basket of raffia and rope or raffia and reed.
  2. Elliptical or rectangular basket.

II Weaving.
  1. Rug ("5x8") with border design.
  2. Rug with center design (Supplementary)

THIRD GRADE

PAPER AND CARDBOARD

FIVE half hour periods per week for eighteen weeks are given to paper and cardboard. The processes of measuring, folding, cutting, and gluing are continued in this grade in more difficult problems. Measurements are required to a quarter of an inch.

I Cutting to measure.
  1. Post card with decorative border or corner piece.
  2. Book mark.
  3. Shipping tag.

II Making filing systems.
  1. Small filing envelopes.
  2. Filing case for envelopes.

3. Large filing envelope.

III Making books.
1. Pamphlet with paper cover.
2. Small portfolio with cloth cover.
3. Bound book of blank paper, cloth case.

IV Making boxes.
1. Small box with reinforced corners.
2. Box lined with colored paper.
3. Pencil box with fitted cover.

CLAY

Clay work is given five half hour periods per week for ten weeks. Modeling from memory is made a feature of the work. Pottery is built up from small pieces thoroughly worked together.

I Modeling objects.
1. Common objects from memory.
2. House, church or school from photograph.
3. Building from memory.

II Study of pose.
1. Pose of child or animal.
2. Modeling of child or animal from memory.
3. Original group study.

III Pottery.
1. Bowl or open dish.
2. Vase.
3. Decorated jar or vase.

BASKETRY AND WEAVING

Basketry and weaving work is given five half hour periods per week for eight weeks. Reed and splint baskets are made in the third grade. A rug with border and center piece is designed and made.

I Basketry.
1. Round basket of reeds.
2. Round basket of ash splints.

II Weaving.
1. Chenille rug (9"x12".)
2. Rug of woolen yarn with all over pattern, (supplementary.)

FOURTH GRADE

PAPER AND CARDBOARD

PAPER and cardboard work is given three half hour periods per week for eighteen weeks. Special emphasis is given to book problems, and accurate use of the rule.

I Cutting to measure.
1. Postal scale.
2. Time recorder.
3. Desk pad.

II Making filing system.
1. Pocket paper file.
2. Desk paper file.
3. Envelope file.

III Book binding.
1. Portfolio with corners, for drawings.
2. Book for illustrations.
3. Rebinding old books or binding magazines.

IV Making boxes.
1. Square box with decorated cover.
2. Folding candy box.
3. Post card box.

CLAY

Clay work is given three half hour periods per week for ten weeks. A little pose work is done, but pottery building is the line of work emphasized in the fourth year.

I Study of pose.
1. Child in action.
2. Animal.
3. Composition of child and animal.

II Pottery.
1. Saucer.
2. Bowl.
3. Decorated bowl.
4. Decorated tile.
5. Decorated candlestick or vase.
6. Fern dish or jar with decorated cover.

BASKETRY AND WEAVING

Basketry and weaving work is given three half hour periods per week for eight weeks. Basketry is similar to the work in the third grade with more difficult shapes. Weaving includes the making of a small cotton towel and a rug.

I Basketry.
1. Rattan basket, elliptical or oblong.
2. Basket of ash splints.

II Weaving.
1. Towel with border and fringe.
2. Rug with center design and fringe.

FIFTH GRADE

WOODWORK

IN the fifth grade the boys are given woodwork two sixty minute periods per week for twenty-four weeks in a definitely organized course of models graded according to the difficulties involved in their construction, and in a sequence of tool operations. The aims are: to teach correct use of a few bench tools; to interest the boys in making simple articles carefully and neatly, thereby developing a desire for doing good work; and to teach a few principles of construction in wood.

I The tools most used are: block plane, back saw, chisel, brace and bit, knife, try square, rule, and hammer.

II Materials used: thin bass wood, glue, sand paper, and small brads.

III Exercises and models:
1. Sawing exercise.
2. Planing and sawing exercise.
3. Name plate.
4. Key label.
5. Chiseling exercise.
6. Cord winder.
7. Shipping tag.
8. Match scratcher.
9. Pencil sharpener.
10. Mariner's compass.
11. Fish line winder.
12. Paper file.
13. Box.
14. Bird house.
15. Key rack.
16. Bracket shelf.
17. Post card box.
18. Sled, bobs, cart, wagon or wheelbarrow.

BENT IRON WORK

Following the woodwork, a course in bent iron and sheet metal work is given two sixty minute periods per week for twelve weeks. The aims are: to give a knowledge of properties of metals as differing from other structural materials; to illustrate and test applications of braced construction; to teach the use of a few simple metal working tools; to develop an appreciation of the principles of constructive and decorative design as applied to bent iron work.

I The tools used are: flat nose and round nose pliers, tinners' snips, metal punch, clamp vise, riveting hammer, rivet set, small brush, wood or lead block, and wooden mallets.

II Materials used: thin strip iron of different widths, iron binders, taggers iron No. 34, rivets, black paint.

III Exercises and models:
1. Binding exercise.
2. Bending exercise, square corners.
3. Bending exercise, circle.
4. Mat or grille.
5. Mail receiver.
6. Hammered tray.
7. Fern dish.
8. Candlestick.
9. Lantern.
10. Bracket.
11. Chain.
12. Warren truss.
13. Pratt truss.
14. Free work.

SIXTH GRADE

WOODWORK

SIXTH grade woodwork pre-supposes a room with an equipment of woodworking benches and tools. It is planned to teach the use of the hand saw, method of squaring up stock with the plane, and simple uses of a number of bench tools. The work occupies two sixty minute periods per week.

I Tools used: block plane, jack plane, back saw, turning saw or compass saw, chisel, gouge, spoke shave, brace and bit, wood file, metal file, tinner's snips, knife, hammer, nail set, small drills counter sink, screw driver.

II Materials used: bass wood, pine, gum wood, glue nails, sandpaper, nails and screws, galvanized sheet iron, brass tubing, bolts and nuts.

III Exercises and models:

1. Planing and beveling exercise.
2. Bill file.
3. Broad surface planing.
4. Bread board.
5. Sawing and smoothing curve.
6. Coat hanger.
7. Gouging exercise.
8. Drawer pull.
9. Nailing exercise.
10. Handkerchief box.
11. Metal beating and filing exercise.
12. Water wheel.

CARPENTRY

BRIEFLY outlined above is the regular work given to the sixth grade classes in the Menomonie schools. Experimental work will be carried on this year with a few of the sixth grade classes, in the making of carpentry joints and typical building constructions on small scale in place of the regular work. After a few preliminary exercises in rip and cross cut sawing and cutting at angles, and in the making of some of the more common joints used in house building, the greater portion of the work will be along lines which shall involve problems of house framing and exterior finishing. The aim is to see what can be done in elementary public school classes as a preparation for an occupation likely to attract a part of the class within a few years.

The following is offered as a suggestion for the experiment:

I Tools used: rip saw, cross cut saw, jack plane, chisel, brace and bit, hammer, nail set.

II Materials used: pine, bass wood, nails, and brads.

III Exercises and models:

1. Sawing exercise.
2. Carpenter's bench (small scale.)
3. Saw-horse.
4. Wood shed, open sides, board roof.
5. Corner of hip roof, fitting hip rafters and jack rafters.
6. Corner of house, laying sill, setting studding and plate.
7. Framing of end of gable and part of gable roof.
8. Setting girders and floor beams.
9. Making and setting window and door frames.
10. Making steps.
11. Making roof truss.
12. Framing barn.

SEVENTH GRADE

WOODWORK

WOODWORK in the seventh grade is given two ninety minute periods per week. In this grade there is required a more thorough study and application of principles gained in the preceding work,

more skill and greater appreciation of good standards of work. Staining and schallacking are begun in the seventh grade.

I Tools used: block plane, jack plane, jointer, back saw, rip and cross cut hand saws, chisels and gouges, and spoke shave, expansive bit, auger bits and drills, counter sink, files, knife, screw-driver.

II Materials used: bass wood, gum wood, red oak, birch, sand paper, screws, stain, shellac.

III Exercises and models:

1. Squaring exercise—straight edge.
2. Paring exercise with chisel.
3. Broom holder.
4. Chiseling broad curved surface—blotting pad.
5. Cross lap joint—flower pot stand.
5. Cutting irregular curves in hard wood—book stall.
7. Chiseling, and finishing free curve—towel hook.
8. Fitting and doweling—sleeve board.

DRAWING

Constructive drawing accompanies the woodwork and is given for one ninety minute period per week.

REPAIR WORK

Experimental work in repairing simple breaks, such as occur constantly in all homes will be carried on with a few of the pupils this year for the first six weeks of the seventh grade, in place of the regular work outlined above. Mr. E. H. Harlacher (Stout '08) has tried the work successfully at Eau Claire, Wis., and it is believed that a little time of every public school pupil might well be spent learning how to keep ordinary household articles in repair.

I Tools used: putty knife, glass cutter, rule, varnish brush, grind stone, whet stone, oil stone, files, soldering copper, gasoline torch, alcohol lamp, blow pipe, screw drivers, plyers.

II Materials used: putty and brads, window sash and pane of glass, pieces of broken glass, shellac, varnish, paint, lye, glue, metal polish, furniture polish, plaster of Paris, crockery cement, resin, chloirde of zinc, solder, blank keys.

III Exercises:

1. Setting a window.
2. Repairing a broken chair.
3. Varnishing or painting a chair.
4. Sharpening an axe, kitchen knife, or pair of shears.
5. Cementing a dish or gluing a broken article.
6. Polishing a piece of metal.
7. Soldering a tin dish.
8. Repairing a lock or fitting a key.

TIN SMITHING

Twelve weeks of experimental work will be given to tin smithing; the cutting and bending of sheet tin and the use of rivets and solder make up the work of the course.

I Tools used: tinner's snips, stakes, hammer, rivet sets, plyers, soldering copper, torch.

II Materials used: sheet tin, rivets, copper wire, solder, acid and salts.

III Exercises and models:

1. Bending square corner.
2. Laying out and cutting to line.
3. Riveting straight joint.
4. Laying out, cutting, bending, riveting, wiring edge—square cornered pan or tray.
5. Soldering holes in piece of tin.
6. Soldering straight joint.
7. Laying out, cutting, bending, soldering—square tin box.
8. Cutting and bending curves, soldering—funnel.
9. Cutting and fitting, making handle—tin cup.

The second semester, eighteen weeks, will be given to experimental work in brick laying and concrete work.

I Tools used: trowel, brick hammer, plumb rule, level, steel square, pointing trowel, cement trowel, closure chisels, shovel, hoe.

II Materials used: stretcher and hard brick, cement, lime, sand, crushed stone, wooden centers, wooden forms.

III Exercises:

1. Study of American, English and Flemish bond.
2. Walls of four, nine, thirteen, and seventeen inches.
3. Segmental arch.
4. Semicircular arch.
5. Paving for sidewalk and street.
6. Chimney.
7. Concrete wall.
8. Concrete arch.

EIGHTH GRADE

WOODWORK

DURING the eighth grade, the pupil develops considerable ability in in the use of bench tools, the first semester continuing the sequence of previous years with added difficulty, the second semester bringing in larger original work. Two eighty minute periods per week are given to woodwork.

I Tools used: same as seventh grade.

II Materials used: same as seventh grade.

III Exercises and models:

1 Accurate squaring up of stock—rule.
2. Broad beveling, gouging, scraping groove—pen tray.
3. Mortising exercise—tool holder.
4. Fine fitting, rounding edges—letter box.
5. Rabbeting, clamping, gluing—picture frame.
6. Doweling and finishing—taboret.

DRAWING

Constructive drawing accompanies the woodwork and is given for one eighty minute period per week.

PLUMBING

Experimental work in plumbing will be given for the eighteen weeks of the first semester to give an acquaintance with some of the plumber's problems as a partial preparation for the trade.

I Tools used: pipe cutter, reamer, wrenches and tongs, taps and dies, hammer and cold chisel, plumber's furnace, lead pot, ladle, joint runner, calking irons, soldering copper, cleaning tools.

II Materials used: iron pipe and fittings, cast iron soil pipe and fittings, lead, oakum, lead pipe, solder and acids.

III Exercises:

1. Study of iron pipe and fittings.
2. Cutting threads in iron pipe.
3. Fitting tee and elbow.
4. Running soil pipe line with vertical and horizontal joints.
5. Making chalked joints.
6. Use and care of plumber's gasoline furnace.
7. Soldering exercise.
8. Making of cup and overcast joint.

CABINET WORK

Experimental work in joinery and cabinet making, similar to what is regularly given in the first year high school, will be tried this year during the second semester of the eighth grade. It will include exercise pieces and finished applications.

I Tools used: same as seventh grade woodwork.
II Materials, used: pine, red oak, nails and screws, glue and sandpaper, stains and polishes.
III Exercises and models:
1. Planing exercise.
2. Game board.
3. Chiseling exercise.
4. Sandpaper block.
5. Exercise in staining, shellacking and polishing.
6. Small box.
7. Half lap joint.
8. Picture frame or tie rack.
9. Single lap butt joint.
10. Glove box or nail box.
11. Table leg joint.
12. Small table.

FIRST YEAR HIGH SCHOOL

WOODWORK

Joinery as the preparation for cabinet making is governed in its arrangement by the difficulty of tool operations. The purpose of the course in woodwork for the first year high school is to instil a knowledge of the principles of joinery by teaching the use and care of woodworking tools; to develop skill in their use by means of progressive exercises involving the different tools and a series of joints; to apply this knowledge and skill in the construction and finishing of pieces of furniture. Five ninety minute periods per week for one semester are given to woodwork.

Exercises:
1. Planing and sawing exercise.
2. Chiseling exercise.
3. End center, and cross lap joints.
4. Clothes tree.
5. Keyed and bolted scarf or spliced joint.
6. Mortising exercise.
7. Model storage rack.
8. Pinned mortise and tenon joint.
9. Seat with mortised rails.
10. Keyed mortise and tenon joint.
11. Book rack with two or more shelves.
12. Dove tail joint.
13. Box drawers with dovetailed front.
14. Groove joint, rabbet joint, dowel joint.
15. Staining and polishing exercise.
16. Finished chair or table.

MECHANICAL DRAWING

Five ninety minute periods for one semester are given to mechanical drawing. The work covers: exercise sheets of lines and letters, geometrical drawings, working drawings of shop problems, simple work in projection, development and intersection.

SECOND YEAR HIGH SCHOOL

WOOD TURNING

As a preparation for pattern making, wood turning includes in addition to the first exercises involving the different cuts, the making of pieces which are of direct value in pattern making. Attention is given to correct position of the body, manner of holding the tools, their correct use and degree of sharpness, dangers, and necessity for continuous attention to work. Wood turning is given five ninety minute periods per week for six weeks.

Exercises:

1. Cylinder,—roughing and reducing to size.
2. Double cone, step cylinder, cylinder with V grooves.
3. Cylinder with circular grooves,—use of gouge.
4. Beaded cylinder, use of paring tool.
5. Compound curve and fillet,—paring tool, gouge, and parting tool.
6. Face plate exercise.
7. Boring exercise,—square edge chisel.
8. Fitting exercise,—reversing in chuck.
9. Application to pattern making:—standard core print, standard hubs, standard taper split core box ends, dumbbell pattern (split), handwheel pattern, sheave pattern with V or square groove, check valve with core box.
10. Applications to hardwood turning:—spindles, chisel handles, vice handles, Indian clubs, mallets, gavels, balls and rings.

PATTERN MAKING AND FOUNDRY PRACTICE

The aim of pattern making in the high school is to give pupils practical acquaintance with typical shop processes employed in pattern making. This is accomplished by making a series of patterns, from the simple solid pattern to the more complex parted and cored patterns, each exercise illustrating some new shop kink.

The three ways of molding with different kinds of sands are explained, and work is done in the green sand process of molding and casting from the student's own patterns. Words and terms peculiar to the work are used and explained. Five ninety minutes per week for twelve week are given to this work.

PATTERN MAKING

1. Ribbed pattern—one part pattern, bench-work, straight cutting, draft, gluing, bradding, sandpapering, finishing with orange shellac.
2. Shoe—one part pattern, bench-work, straight cutting, green sand core, draft, finishing with orange shellac.
3. Angle plate—one part pattern, bench-work, curved cutting, gluing, bradding, leather fillets, orange shellac.
4. Rectangular plate with a square and a round hole—holes to be straight, made with dry sand cores; one part pattern, bench-work, simple core prints, orange and black shellac.
5. Core box for No. 4—two parts; bench-work, doweling, curved cutting with gouge, black shellac.
6. Hammer for copper work; bench-work; two part pattern; doweling, curved cutting, use of drawknife, rasp and file, gluing up joint with paper, splitting joint, doweling, fitting core prints, and core box for same in two parts; orange or pattern and black shellac for core prints and core box.
7. Cylinder—two part pattern, lathe-work, use of paper joint, or pinch dogs, centering, turning with gouge and skew-chisel, parting tool, calipering to size, sandpapering, splitting joint, doweling, orange shellac.
8. Lever for lathe—two part pattern, irregular turning, and bench-work.
9. Coupling for machine shop—one part pattern, with single core print, and core box for same in two parts.
10. Blind nut or piston rod sleeve—two part pattern, lathe and bench-work, balanced core, laying out hexagon, irregular core box for same, half box.
11. Handwheel for lathe—two part pattern, lathe and bench-work, making templet for rim, fitting spokes or turning web and hub, chuck work.
12. Pulley—two part pattern, lathe and bench-work, built up work, use of face plate for rim, use of shoot board, fitting farms.

MECHANICAL DRAWING

Five ninety minute periods per week for one semester are given to mechanical drawing. The work includes exercise sheets, difficult projection, perspective, shadows, machine details, architectural details, tracings and blue prints.

THIRD YEAR HIGH SCHOOL

COURSES are offered to the boys of the junior and senior classes along several special elective lines. The course selected at the beginning of the junior year must be continued through the senior year. Thus, for two years, five ninety minute periods per week are given to courses that are comprehensive enough to be valuable as a partial preparation for a trade. The following courses are offered:

ARCHITECTURAL DRAFTING

The third year architectural drafting includes: details of building construction, balloon and braced frames, floor plan of cottage—studying size and shape of house suitable to lot and convenient arrangement of rooms, front and side elevations, framing plans and elevations, door and window details, fire-place, dormer window, sliding doors, stairway, sheathing, roof, partitions, floors, foundations.

MACHINE DRAFTING

The third year machine drafting includes: rivet joints, bolts, studs, set screws, pins, keys, cotters, shafting, journals, couplings, shaft hangers, gearing, pulleys, clutches, cranks, eccentrics, valves.

MACHINE SHOP PRACTICE

The third year machine shop practice includes: taper turning exercise, thread cutting exercise; hexagonal bolt and nut; double eccentric; lathe center; fitting exercise—work fit, drive fit, snug fit, shrunk fit; jack screw; shaper exercise; planer exercise; spur gear; stand of gears.

PLUMBING AND BRICKLAYING

Work in these two trades is described in a special circular of information.

FOURTH YEAR HIGH SCHOOL

ARCHITECTURAL DRAFTING

Plans and specifications for a two story frame dwelling of a given number of rooms, estimating cost of same, calculating strength of materials used, heating and ventilating systems, plans and elevations of brick and stone buildings to be used as dwellings, clubs, stores, shops, schools, and churches, heating plants for above, details of brick buildings.

MACHINE DRAFTING

Detail and assembly drawings of machines now in the school shops, simple machines designed and drawn from specifications, full set of tracing and blue prints made for above.

MACHINE SHOP PRACTICE

Construction of simple machine, making extra pieces of exercise work, repairing broken parts of machine tools, making reamers, taps, drills, and milling cutters.

PLUMBING AND BRICKLAYING

See special circular.

DOMESTIC SCIENCE AND DOMESTIC ART

COURSE OF STUDY IN MENOMONIE PUBLIC SCHOOLS

GENERAL SCOPE AND PURPOSE

DOMESTIC Science and Art courses in the public schools of Menomonie are laid out with two definite underlying purposes; first, the purpose to develop the individual in her several capacities; second, the purpose to improve home conditions by this development of the individual. That both purposes may be realized, a third may be added---to show by direct application, the relation of these lines of work to the usual work of the elementary and high school courses.

The general educational purpose is to present such fundamental principles and their application in systematic exercises and operations, as shall give to the pupil habits of attention and exactness, the power of logical thought, a high ideal of the perfection and dignity of labor in the home, and the skill and ability to use her mental and physical powers definitely, intelligently, and economically in the effort to realize these ideals. At the same time there shall come to her, knowledge and experience that shall be of direct use in her life and in her home.

To this end the course includes a definite amount of study and systematic application that must precede the working out of individual ideas and inventions, though opportunity is given in the application of known principles and operations for originality and self expression.

The course covers a range of nine years, beginning in the fifth grade and continuing through the high school. The subjects included are as follows: sewing in its various aspects, plain sewing, repairing, fine needle work, dressmaking, millinery, and art needle work; the study of textile materials, selection, wearing qualities, suitability to use, cost, and correct combinations; the study of food materials, manner of production, selection, market values, composition, food value, and dietary requirements; cooking, restricted largely to the preparation of the simple food materials found in the average home and to invalid cooking; serving, including the serving of various meals and the care of dining-room furnishings; household management, a study of house sanitation, house furnishing, business management in the home, home economics, and study of the various preceding lines of work with allied science and art lines in their relation to the organization of the home.

FIFTH GRADE

MODEL AND PLAIN SEWING, TEXTILES

I Canvas work.
1 Discussion.
Nature of materials used.
Thimbles, needles, scissors.
Correct sewing position, directions of light.
2 Exercises and models.
Running, basting, overseaming, etc., on canvas models.
Thimble and needle drills.
Designs for stitches made on paper.
3 Article.
Canvas needle book upon which are used the stitches made in models.

II Darning, stockinet and cloth.
1 Discussion.
Value and use of darning.
Keeping of clothing in repair.
Suitabitily of darning material to nature of cloth darned.
2 Models and Exercises.
Models of square and pointed darns.
Small woven models showing warp and woof.
Review of running stitch.
Model of cloth darning, straight, bias, three corned.
3 Articles.
Stockings and worn garments.

III Darning ball case.
1 Discussion.
Care of sewing materials.
Kinds of cotton, etc., used in darning
2 Exercises.
Covering card-board.
Lacing and overhanding stitch.
3 Article.
Small cretonne case for darning balls.

IV Ornamental darning.
1 Discussion.
Materials suitable to use for table runners, sofa pillows.
Use of floss, rope silk, cotton, for ornament.
2 Exercises.
Designs made in paper by paper cutting, cut from card board, traced on cloth.
Review of darning stitch, hemming, outlining.
3 Articles.
Runners and pillows of Russian crash.

V Doll's outfit, sheets and pillow case.
1 Discussion.
Nature, kinds, prices of muslin and sheeting.
Sizes of standard sheets and pillow cases.
Care of bedding, airing, ironing, etc
2 Exercises and models.
Models of hems and seams.
Hemming, overseaming, overcasting.
Cutting to measure by thread.
Determination of length and breadth of cloths.
3 Articles.
Pair of doll's sheets and pillow case.

VI Blanket for bed.
1 Discussion.
Wool and its uses.
Warmth of blankets for bed coverings.
Sanitation of bed, ventilation, lightness, warmth.
2 Exercises and models.
Blanket stitch.
Cutting to measures.
3 Article.
Flannel blanket.

VII Comfortable.
1 Discussion.
Uses of cotton batting, qualities, price.
Comparison of cotton and wool.
2 Exercises and models.
Review of running, basting, overseaming, blanket stitch.
Tacking and padding.
Finishing edges.
Spacing of tufting.
3 Articles.
Comfortable and shield for top.

VIII Pad to cover mattress.
1 Discussion.
Value of pad, materials used.
Sizes of pads, manner of making.
Exercises and models.
Review of preceding stitches.
Binding, quilting.
3 Article.
Cheese cloth bed pad.

IX Cover or quilt.
1 Discussion.
Materials suitable for covers.
Materials used in quilts.
Economy is using up small pieces.
Comparison of present methods with old fashioned methods to bring out economy of time in use of spread.
Patterns of quilts, styles of covers.
2 Exercises.
Cutting pieces of quilt or cover.
Running, overseaming, hemming, binding, gathering, quilting, sewing on trimming.
3 Articles.
Quilt or lawn bed cover.

SIXTH GRADE

PLAIN SEWING, REPAIRING, TEXTILES

I Patching.
1. Discussion.
When and where to patch.
Materials to use in patching.
Use of old and new materials.
2. Models.
Hemmed muslin patch.
Overseamed gingham patch.
Flannel patching.
3. Articles.
Worn garments of various kinds.

II Use of tapes, buttons, fancy stitches.
1. Discussion.
Uses of tapes and buttons.
Bags, kinds and uses.
Nature and cost of cretonne.
2. Models.
Binding with tape.
Chain stitch.
Sewing on brass rings.
3. Article.
Circular button-bag.

III Use of various new stitches, continuation of II.
I. Discussion.
Care of soiled clothing.
Removal of stains.
Nature and cost of chambray.
2. Exercises and models.
Review of various stitches already known.
Putting on of tape.
3. Article.
Laundry bag.

IV Articles for kitchen, dish towels.
1. Discussion.
Economy and value of use of flour sacks.
Cleaning, if flour has been lately removed.
Removal of stains and printing.
Advantages and methods of marking towels.
2. Exercises and models.
Ripping of chain stitch.
Review of hemming and overseaming.
Use of cross-stitch for marking.
3. Article.
Dish towel from flour sack marked with cross-stitch letters.

V Roller towel.
1. Discussion.
Use of linen for towels.
Kinds, selection, prices, width.
Sizes of roller towels.
2. Exercises and models.
Lapped seam.
Review of stitches used.
3. Article.
Roller towel of crash.

VI Holder.
1. Exercises and models.
Use of padding.
Quilting and marking.
Sewing on of tape.
2. Article.
Holder marked with pupil's initial.

VII Sleevelets.
I. Discussion.
Nature and cost of gingham.
Use of rubber in tapes, etc.
2. Exercises and models.
French seam in model.
Casing for rubber.
Review of other stitches.
3. Article.
Checked gingham sleevelets.

VIII Articles for dining-room, napkins or table-cloth.
I. Discussion.
Selection of linen, qualities, prices, patterns.
Sizes of napkins, widths of table-cloths.
Cutting linens in buying.
2. Exercises and models.
French hem and over-handing.
Drawing thread and cutting to line.
3. Article.
Napkin or table cloth.

IX Hem stitched and fringed linen.
1. Discussion.
Round thread linen.
Merits of hemmed and fringed edges.
Kinds and uses of doilys.
2. Exercises and models.
Hem stitching.
Fringing.
3. Article.
Square linen doily.

X Scalloped table linen.
1. Discussion.
Laundering and care of table linen.
Care of embroidered linens.
2. Exercises and models.
Design for edge and eyelets on paper.
Models of scallops and eyelets.
Transfer of design.
Padding, working, cutting, finishing.
3. Article.
Round linen doily, scalloped, and worked with eyelets.

XI Crochet.
1. Discussion.

Use of crochet in making articles of use or ornament.
2. Exercises.
Use of hook.
Plain, scallop; Irish.
3. Article.
Oval table mat or doily.

XII Articles for bed room.
1. Discussion.
Sanitary sleeping rooms.
Materials suitable to use.
2. Exercises.
Sewing on of lace and insertion.
3. Articles.
Mats, dresser scarf, pin cushion cover.

SEVENTH GRADE

UNDER-GARMENT MAKING, TEXTILES

I Corset cover or chemise.
1. Discussion.
Materials suited to use, cost, selection, shrinking.
Trimmings adapted to various qualities of material.
Various shapes of garments, suitability to age and size.
Care and laundering of underwear.
2. Exercises and models.
Use of machine and attachments.
Use of patterns.
Drill in economical use of cloth.
Review of stitches and processes involved.
Models of ways of sewing on trimmings, feather stitching, facings, button holes.
3. Article.
Corset cover—cut, fitted, finished with lace and beading or with embroidery and fancy stitching.

II Drawers.
1. Discussion.
Same as above with introduction of new material, trimmings, etc.
Estimation of cost of garments.
2. Exercises and models.
Use of tucker, gatherer, hemmer on machine.
Review, same as above.
Models of tucks, gathers, plackets, bands.
3. Article.
Pair of drawers, trimmed with lace, embroidery, or some applied hand work.

II Night gown or skirt.
Subject is developed same as preceding subjects, adding new models, new forms of trimming, etc. In completing work an estimate is made of entire cost of suit of undergarments.

EIGHTH GRADE

FOOD STUDY AND COOKING

I Study and recitation room work.
1. The human body—General structure and physiology of the lungs, digestive organs, and organs of excretion; special study of digestion, absorption, metabolism, and assimilation.
2. The essentials of good health—Good food, pure air, pure water, personal cleanliness, and intelligent care of the body.
3. Food—Definition; physical and chemical properties; classification into proteids, carbo-hydrates, fats, mineral matters; discussion of each class according to composition, digestion, use in the body, sources of supply; the manner of growth, method of manufacture, and market value and appearance of common food stuffs under each class.
4. Air—Composition, physiological uses, oxidation in the body; combustion including definition, essentials, fuels, products of combustion.
5. Water—Sources, kinds; chemical and physical properties; effects of heat and cold; physiological uses; use as cleansing agent.
6. Field of study preparatory to laboratory work—General care of kitchen furnishings, tables, sinks, refrigerators, pantry, range, including the essentials of a good fire, laying of fire, management of drafts and dampers; care of utensils; washing of dishes, towels, etc.; study of tables of weights and measures and abbreviations.

II Kitchen laboratory work.
1. Experiments—Proteids, the effects, of various degrees of heat upon different proteids; carbo-hydrates—division into starches and sugars,

structure of each, effects of heat; fats—structure, effects of heat, etc.; deduction of principles of cookery involved in the preparation of each class.

2. Preparation of Foods: Proteids — eggs, meats, milk; carbohydrates—sugar, rice, tapioca, etc.; fats—bacon, butter, chocolate; combinations of food classes—cereals, hot breads, light breads, simple cake and pastry mixtures, cookies, soups, beverages, spring vegetables, and simple desserts.

FIRST YEAR HIGH SCHOOL

FOOD STUDY AND COOKING

I Study and recitation—room work.

1. General review of Eighth Grade work with further elaboration of food classification and continued study of food stuffs with reference to food materials contained, classifications, and preparation for market.

2. Proteids: Meats—composition; food value; use in body; source; kinds—division into beef, mutton, pork, poultry, and game; market appearance; cuts; cost; methods of cooking; methods of recooking: Fish—composition; market appearance; preparations for use; methods of cooking, and recooking: Milk—composition, food value, use, adulterations, sterilization, and preservation; products of milk: cream, butter, cheese: Eggs—composition, food value, use, preservation, tests for freshness, methods of cooking: Gelatine—composition, food value, use, how obtained, kinds, market appearance, methods of preparation.

5. Study of markets—Visits to various markets, study of cuts of meats, cost of materials, practical marketing, visits to mills and shops, buying of materials used by classes.

4. Study of food combinations—Necessity for varied diet, reasons for cooking food, planning of menus with reference to food value, estimation of costs of menus, comparison of economic food values of different foods.

5. Field of study preparatory to laboratory work—Continuation of work commenced in preceding year, care of dining room and its furnishing.

6. Serving—Plain menus for series of meals, doing marketing, preparing food, serving meal, or acting in capacity of host or hostess.

II Kitchen laboratory work.

1. Experiments—Effects of heat, cold, various solvents, acids, salt, etc., upon proteid, carbo-hydrate, fat; action of yeast and other leavening agents.

2. Preparation of Foods—Cooking meats and fish; preparation of milk to be used as food, including its combination with vegetables, eggs, junket, etc.; cooking eggs in various ways; preparation of gelatine; use of flours in various ways; preparation of foods for frying; making of cakes, pastry, ices and ice cream, desserts, and salads. Assistance in general cooking rendered other classes in the preparation and serving of meals.

SECOND YEAR HIGH SCHOOL

FINE NEEDLE WORK, DRESSMAKING, TEXTILES

I Fancy apron.

1. Discussion—Study of materials used, kind, width, cost, adaptation. Estimate of amounts and total cost. Varieties of aprons and ways of trimming.

2. Exercises and models.—Review of hemming, overseaming, gathering, sewing in lace. Models of bands and trimmings. Putting on of strings. Cutting of paper pattern free hand. Design of trimming sketched.

3. Articles—Fancy apron made by hand, trimmed with lace or needle work.

II Corset cover or chemise.

1. Discussion—Study of materials and trimmings. Study of lines of figure and adaptation of garment to figure.

2. Exercises and models. Review of machine lessons. Taking of measures to use in drafting. Drafting patterns, first to general measures, then to individual measures. Re-

view of seams, buttonholes and sewing on buttons. Models of buttonholes and trimmings.

3. Article—Corset cover made by hand, except seams, trimmed with needle work.

III Drawers.

Practically same as above, using machines, reviewing preceding work, adding such exercises and models as are necessary in development of subject.

IV Skirt.

Materials used for skirt vary from preceding work, being gingham, satteen, and skirting materials.

V Shirt waist.

I. Discussions. Shirt waist materials, trimmings, combinations. Adaptation of style to requirement of wearer. Utility and varieties of shirt waists.

2. Exercises and models—Use of measures. Drafting to general measures, then to individual measures. Cutting from inexpensive material to test. Designing of waist and making of paper pattern upon design. Models of plackets, cuffs, neck finish, button holes.

3. Article—Tailored shirt waist in linen or percale.

VI Afternoon gown.

Discussion. Adaption of style of garment to use. Selections of materials and trimmings. Color schemes and color cards.

2. Exercises and models—Designing of gown and making of patterns. Cutting, fitting, finishing of garment.

3. Article—Dimity or lawn dress trimmed with lace or some form of hand-work.

THIRD YEAR HIGH SCHOOL

MILLINERY, ART NEEDLEWORK

I Fall Millinery

1. Wire work--preparation of wire, bandeaux, buckles, the making of frame from measurements, frame for sailor hat.
2. Renovating and cleaning—velvet, felt, feathers, lace, ribbons, chiffon.
3. Tinting—use of gasoline and oil paints, colored powder and chalk.
4. Making of bows—designing and making in tissue paper.
5. Proportion in hats.
6. Study of styles—comparison of present with preceding.
7. Remodeling.
8. Materials used in hats—source, values.
9. Millinery stitches—fly running, back stitch, overcasting, feather, slip stitch, saddlers, lacing.
10. Preparation of trimming—bias folds, points, ears, rolled hem, plain folds, milliners' folds, double folds, French folds.
11. Wiring.
12. Buckram frame from original design—making, covering, trimming, lining, discussion of selection of materials and cost.

II Spring millinery

1. Study of styles
2. Discussion of materials—kinds, combination, cost.
3. Remodeling of old hats.
4. Review of frame making.
5. Street hat—frame, covering, straw sewing, trimming, finishing.
6. Lingerie hat—embroidered, lace, net.

Where hand embroidered materials are used, the designing and embroidering are done in the art needlework class.

III Art needle work

1. Charactertstics.
2. Design—adaptation of design to line in needlework.
3. Articles suited to kind of finish or decoration.
4. Materials suited to kind of finish, decoration, design.
5. Materials—source, selection, cost.
6. Art needlework stitches.
7. Finishing.
8. Kinds of work—hemstitching, darning, applique, cross stitch lettering, scallops and dots, Wallachian, cut work, eyelet, Bermuda fagoting, French embroidery, drawn work.

FOURTH YEAR HIGH SCHOOL

HOUSEHOLD MANAGEMENT, DIETETICS, COOKING, SERVING

I. Household management

Location of house: Essentials—sunlight, free circulation of air, dryness; discussion of elevation of

site, soil, location with regard to contamination.

Selection of house: Country house—character of soil, water supply, source of contamination; city house—condition of pavements, gutters, soil, and drains.

Building of house: Materials available; conformity to use; convenient arrangement of rooms; sanitary arrangement of cellar, water supply, drainage, ventilation, lighting, heating.

Drainage and plumbing: Canons of good house drainage—application in selection or building of house; qualities of a good system—location of fixtures, arrangement, use and care of various pipes and fixtures.

Water supply: Necessity for absolute purity; city supply; individual supply including advantages and disadvantages of various kinds of wells and cisterns, their use and care; filtration and practical tests of condition of water.

Ventilation: Necessity for pure air; objects of ventilation; real ventilators; makeshift ventilators; ventilation of various rooms and parts of the house.

Heating: Objects; methods, including a discussion of use of hot air, steam, and hot water; stoves and grates; average temperature of various rooms.

Lighting: Objects; necessity for supply of air; methods, including use of kerosene, gas, electricity; care of lighting apparatus; comparison of value of various methods.

Furnishing: Fundamental principles of good furnishing; effect of furnishing upon health, comfort, and development of family; consideration of floors, walls, windows with reference to use; finish—materials used, choice of color, designs, etc.

Furnishing and care of different rooms of house: Kitchen—furniture, floor, walls, windows, sink, cabinets, tables, cupboards, lights, pantry; special furniture that contributes to comfort, such as high stools, bins, boxes, jars, etc.; care of all furniture including daily and weekly cleaning, and annual cleaning and renovating of walls, and floors; dining-room—floors, windows, furniture, including table furnishings; care, weekly sweeping, dusting, crumbing after meals, lighting, heating and airing; sleeping rooms—floors, windows, walls, closet, furniture, including furnishings of bed, care, weekly cleaning, removal of soiled clothes, making of beds, removal of slops, dusting, airing, heating and lighting; bath-room—floors, walls, windows, cupboard, fixtures—simple, easily kept clean, in sight, care, airing and ventilation, thorough cleaning and flushing, use of disinfectants and deodorants.

Planning of house of moderate size, using principles worked out previously; furnishing of the same, with selection of color schemes and furniture adapted to use of house.

II. Study of dietaries

1. Review of physiology, especially the physiology of digestion, absorption, circulation, assimilation, respiration, excretion.
2. Study of food materials, compositions, digestion, food value, general sources.
3. Dietary requirements in health, age, climate, occupation, personal use of foods.
4. Dietary requirements in disease; adaptation of principles to selection of foods suitable to arrest or aid treatment of diseases commonly handled in the home.

III. Preservation and adulteration of foods.

Preservation and adulteration of food materials: Preservation by means of elevation and reduction of temperature, exclusion of air, compression, drying, extraction, use of antiseptic substances, use of acids and gases, use of special preservatives; adulterations not injurious to health; use of inferior goods; increase of bulk by use of cheaper food materials; adulterations injurious to health; including use of colors, chemical preservatives, materials having no food value; effects of food preservatives and adulteration; remedy—knowledge of food materials.

IV. Cooking and serving.

1. Plain cooking: The completion of such cookery as a girl may use in her own home with a review of practically the whole course previously considered.
2. Invalid cooking: A study of application of dietetics; hygiene and care of sick room; simple care of patient, serving of foods; preparation of gruels, meats and broths, ices, beverages, breads, desserts.
3. Preparation and serving of meals: Marketing for, preparing and serving three meals by each group of girls: A purse of $2.50 is allowed and, from this, provision must be made for six invited guests; members of the class act as host, hostess, and waiters; study of table furnishings, including linen, silver, crystal, and china, care of table furnishings.

V. Economic aspect of study of home.

1. Labor in the home: Necessity for organizing and systematizing work; regular times for doing certain work, realization of time required for performance, economy of time and nervous energy by careful planning: Plan of one week's work, month's work, season's work: If labor is performed without outside help—division of work in family, value in training in responsibility: If work is done with assistance of maid—appreciation of duties of maid, careful planning of work, sharing of responsibilities; Use of specialized labor in home—house cleaning, painting and decorating, laundering, serving, food preparations.
2. The modern home compared to primitive home: Formerly woman as producer, now woman as consumer, spending done by women, variety of work done outside of home, value attached to labor invested in articles of use and ornament.
3. The woman who spends: The importance of wise spending; relation of spender to community, to family, to quality of commodity purchased, to condition of business; responsibility to others; the home the unit of society.
4. Apportionment of income to lines of expenditure: Elements which tend to regulate; ideal proportions—importance of considering, study of typical divisions.
5. Keeping of accounts and general business: A basis to regulate apportionment of income; economy, true and false; business methods in home—accounts, banking, checking, drafts, etc.

RELATION OF PRECEDING COURSES TO OTHER PHASES OF THE GENERAL COURSE OF STUDY

I. English.

Throughout the entire course special care is taken to organize subject matter carefully, to aim at clear expression, use of correct construction, good oral expression, and ability to discuss freely and to trace steps in progress of work definitely.

II, Chemistry.

In chemistry the work of boys and girls is differentiated, the girls work after preliminaries in general inorganic chemistry taking the following courses:

1. Chemistry of foods: Carbon compounds—cellulose, its composition, physical properties, occurrence, experiments to test for starch, physical and chemical; properties, occurrence, use; sugars, physical and chemical properties of the glucose group; cane sugar group including cane sugar, malt sugar, milk sugar; occurrence of sugars; commercial preparation: Hydrocarbons--alcohols, their derivation, composition, solvent properties; acids, acetic, tartaric, malic, citric, oxalic, lactic, butyric, discussions of fermentation; fats, physical and chemical properties, sources and occurrences, palmitin, stearin, butterin, making of soft and hard soaps: Nitrogen compounds—proteids in meats; collagen in bones; egg albumin; milk casein; legumin from peas and beans; study of compositions, properties, sources: Inorganic

compounds; distribution in animal and plant tissue.

2. Chemistry of bread making: Fermentation process; yeast; favorable condition for growth—food, temperature conditions, oxygen necessary, tests to prove; leaven; salt rising process: Simple chemical reaction; baking powders use of ammonia, cream of tartar, phosphates, sulphate, alum, tests for determination; soda—properties, action upon acids of sour milk and molasses.
3. Chemistry of Cleaning: Cleaning reagents, alkali-soap, borax, ammonium hydroxide, caustic alkalies, washing powder; a study of action upon various materials, and reagents; organic compounds such as turpentine, benzene, petroleum, napthalene, ether, chloroform, carbon bisulphide—tests showing their action upon materials, grease, etc.; acids in common use, vinegar, citric acid, oxalic acid, tartaric acid, lactic acid, hydrochloric acid, cream of tartar—use in removal of stains, bleaching; oxidizing agents used in bleaching and removal of stains—bleaching powder, sulphur dioxide, sodium sulphite: Removal of stains, study of nature and agents of removal of stain; mineral oils and their treatment—wax stains, pitch and tar stains, paint; iron, ink, fruit, wine, grass, blood, acid: Water; hardness as caused by calcium, magnesium, iron, aluminum, chlorides, sulphates, carbonates, tests for various compositions; softening water when temporarily hard by—boiling, use of sodium carbonate, lime water, borax, lye, soap; when permanently hard—sodium carbonate, barium hydroxide or chloride, sodium oxalate: Bluing—indigo, Prussian blue, ultramarine, aniline colors.
4. Disinfectants, antiseptics, deodorants: Natural, sunlight, dry air: Chemical—charcoal, lime, sulphur dioxide, carbolic acid, creosols, copper sulphate, copperas, potassium permanganate, hydrogen peroxide, bleaching powder, formaldehyde gas, mercuric chloride; tests showing action, when to use, way of using.

III. Physics.

An effort is being made in teaching the principles of physics to show practical applications to the special subject in which the pupils are interested.

A knowledge of color is applied to selections for clothing and interior direction, heat to principles underlying various heating systems, conduction to selection of materials to be used for conveying or conserving heat, currents of air to ventilating, heating, refrigeration, electricity to heating and cooking apparatus, diffusion, reflection, deflection to lighting and so on.

In this effort at correlation the work for the boys and girls while developed from the same fundamental principles must be entirely different in applications.

IV. Art work.

In color and design, a part of the work is a direct application of principles involved to problems in fine needle-work, art needlework, millinery, dressmaking, and house furnishing.

ART INSTRUCTION

COURSE OF STUDY IN THE MENOMONIE PUBLIC SCHOOLS

THE course of study in art instruction in the public schools of Menomonie covers three general subjects:---representation, decoration, and construction.

The specific subjects pursued with special reference to the development of the power to represent are (a) plant drawing, (b) landscape, (c) still-life or object drawing, (d) life and action, (e) illustration. That which develops the power to decorate and to construct is design.

The season of the year and its available material, the home and local activities determine very largely when each of these subjects may be best taught.

The first four years of the child's school life may be termed the objective stage, or that in which he is devoted to the observational study of things. When he comes to his fifth year, in addition to observational study, his work assumes a more technical phase, hence the fifth and sixth years may be termed the technical stage, in which he begins the study of the principles or laws of beauty and those governing the appearance of objects. In addition to the kinds of work already described, the seventh year marks the beginning of the creative stage in which his accumulated knowledge is applied.

FIRST QUARTER

Representation---plant drawing (fall flowers, sprays, leaves, weeds, grasses, seed pods), trees, fall landscape, including illustration of fall occupation and games in color and values of gray.

I Sequence of plant drawing in grades.
   1. Objective—First grade—General line of growth. Second grade—Relation of branches to main line. Third grade—Proportion in mass of one part to another. Fourth grade—Massing of parts in one tone.
   2. Technical—Fifth grade—Expression of fore-shortening of parts by means of two or three tones. Sixth grade—Expression of the whole in value.
   3. Creative—Seventh grade—Detail of structure. Eight grade—Expression of texture. Quality of line and tone.

II Sequence of color.
   1. Objective—First grade—Spectrum. Second grade—Standards. Third grade—Tints and shades. Fourth grade—Hues.
   2. Technical—Fifth grade—Compliments. Sixth grade—Value scale.
   3. Creative—Seventh grade—Intensity scales. Eighth grade—Harmonies of similar and dissimilar colors.

III Sequence of landscape work.
   1. Objective—First grade—Simple division of space expressed in flat earth, sky, and distant trees. Second grade—Irregular horizon line, addition of clouds. Third grade—Simple element in foreground. Fourth grade—Atmospheric conditions.
   2. Technical—Fifth grade—Expression of foreground, middle distance. Sixth grade—Principles of perspective applied.
   3. Creative — Seventh grade — Careful detail of elements. Eighth grade—Composition.

SECOND QUARTER

Representation---Object drawing (fruits, vegetables, still life), illustration of winter activities.

I Sequence of Object Drawing.

1. Objective—First Grade—Direction of line (objects associated with activities). Second Grade—Relation of one line to another, expressed in angle. Third Grade—Proportion of one part to another in mass. Fourth Grade—Proportion and relation of one object to another in mass.
2. Technical—Fifth Grade—Expression of fore-shortening in line and mass. Sixth Grade—Expression of whole in values.
3. Creative—Seventh Grade—Detail of structure, light and shade. Eight Grade—Texture, quality of line, and tone.

Representation---Life and action (illustration of spring activities).
Decoration---Design.

THIRD QUARTER

I Sequence of life and action.

1. Objective—First grade—Direction of line expressing general action of pose. Second grade—Relation of direction of one part to another expressed in angle. Third grade—Proportion of one part to another in mass. Fourth grade—Proportion and relation of one figure to another in mass.
2. Technical—Fifth grade—Fore shortening of parts expressed in line and mass. Sixth grade—Expression of whole in values.
3. Creative—Seventh grade—Study of detail, light and shade. Eighth grade—Expression of textures. Quality of line and tone.

II Sequence of design.

1. Objective—First grade—Simple repetition of spots in line. Second grade—Repetition of spots extending in two directions. Third grade—Proportion of one spot to another. Fourth grade—Massing of spots.
2. Technical—Fifth grade—Principles of design (balance, rhythm, unity) studied and illustrated. Sixth grade—Design rendered in values.
3. Creative—Seventh grade—Design rendered to express harmony of similar colors. Eighth grade—Design rendered to express harmony of dissimilar colors.

FOURTH QUARTER

I Representation—plant drawing (spring growth). (See first Quarter) Illustration of spring activities.

II Decoration—Design (See third Quarter)

FIRST AND SECOND YEAR HIGH SCHOOL

The course covered by the first and second year high school classes consists in:

I A closer and more practical application of the principles of perspective in the drawing of objects and interiors of rooms;

II A more definite study of form in drawing from cast; still life and pose;

III Free handling of color in painting flowers of all kinds; and

IV The theory of color and design as applied in the construction and decoration of certain articles.

STUDENTS

STOUT INSTITUTE ENROLLMENT 1908-1909

MANUAL TRAINING DEPARTMENT

SENIOR CLASS

Bauman, Max H.,	Watertown, Wis.	Hanson, Emma,	Owatonna, Minn.
Bonell, Grant R.,	Menomonie, "	Kavanaugh, Charles P.,	Downing, Wis.
Bowman, Clyde A.,	" "	Kavanaugh, Michael F.,	" "
Chloupek, Roland E.,	Manitowoc, "	McKeever, James F.,	Milwaukee, "
Coffin, Theodora L.,	Eau Claire, "	Miller, O. M.,	LaJunta, Colo.
Chalfant, Earl R.,	Douglass, Arizona	Nihart, Claude E.,	Oklahoma City, Okla.
Coram, Arthur R.,	Menomonie, Wis.	*Price, Geo. G.,	Oakfield, Wis.
Funsett, Harlow G.,	Deerfield, "	Roehl, Louis M.,	Loyal, "
Gerber, Henry P.,	Menomonie, "	Scharr, Harvey J,,	Menomonie, "

JUNIOR CLASS

Abercrombie, Ray E.,	Omro, Wis.	Johnson, J. Nevin,	Menomonie, Wis.
Barry, Robert,	Muscatine, Iowa	Knowles, L. F.,	Fremont, Mich.
Beardsley, Charles,	Ellsworth, Wis.	Lien, Louis T.,	Cambridge, Wis.
Beckmann, Frank H.,	Flint, Mich.	Peart, Ervin A.,	Pittsville, "
Church, Rupert,	Oshkosh, Wis.	Raitt, T. Grant,	Durand, "
Churchill, Floyd V.,	Platteville, "	Schaefer, Henry J.,	Menomonie, "
Cornwell, Albert M.,	Detroit, Mich.	Shove, Loren,	Waukau, "
Craig, Oliver N.,	Barberton, Ohio	Solar, Frank I.,	S. Kaukauna, "
Davis, Irl R.,	Janesville, Wis.	Stauffacher, Earl M.,	Ackley, Ia.
Flagg, Charles A.,	Edgerton, "	Vanderhoof, Charles S.,	Ogden, Utah
Foster, Miles T.,	Nelson, "	Vangilder, W. Earl,	Omro, Wis.
Grant, George F.,	Saginaw, Mich.	Vickers, Harvey H.,	Edgerton, "
Heuser, Ernest E.,	Fort Scott, Kan.	Wiegand, C. William,	Waseca, Minn.
Hilgendorf, Martin W.,	Juneau, Wis.	Wheeler, Otis O.,	Antigo, Wis.

DOMESTIC SCIENCE DEPARTMENT

SENIOR CLASS

Anderson, Ethel E.,	Norway, Mich.	Looney, Marjorie,	Menomonie, Wis.
Beck, Frances,	Madison, Wis.	McDowell, R. Edith,	Manhattan, Kan.
Burdick, Cora B.,	Milwaukee, "	McLean, Marguerite L.,	Menomonie, Wis.
Chamberlin, Bessie A.,	Menomonie, "	*Moran, Esther,	Superior, "
Considine, Brightie E.,	Chicago, Ill.	Moreland, Grace E.,	St. Paul, Minn.
Davis, Genevieve,	Abilene, Kan.	Oliver, Frances M.,	" "
Devereux, Mildred D.,	Ada, Minn.	Oliver, Jessie M.,	Columbus, Wis.
Englebretson, Cliffie S.,	Chippewa, Wis.	Patterson, Alice C.,	Bloomington, "
Farwell, Anna V.,	Dodgeville, "	Reynolds, Lucile W.,	Jacksonport, "
*Fitzgerald, Nellie,	Oshkosh, "	Riley, Laura,	Chippewa Falls, "
Goessling, Jennie,	Glenbeulah, "	Ristow, Lillian L.,	Onalaska, "
Hogan, Elizabeth,	Duluth, Minn.	Royce, Lillian,	Fort Atkinson, "
*Hooey, Helen M.,	Rice Lake, Wis.	Taft, Blanche W.,	Whitewater, "
Hough, Helen E.,	Ironwood, Mich.	Thomas, Emily M.,	Menomonie, "
Ingram, Emily J.,	Florence, Wis.	Thuerer, Jessie L.,	Baraboo, "
Jackson, Jessica P.,	St. Paul, Minn.	*Warner, Nellie,	Milwaukee, "
Jenson, Anna C.,	Green Bay, Wis.	Wyatt, Ethel V.,	Tomah, "
Klumb, Edna M.,	West Bend, "	Zaudke, Nora,	Whitewater, "

*Will finish during Summer Session.

JUNIOR CLASS

Alford, Hazel K.,	Hastings, Neb.	Mason, Marion I.,	Niagara, Wis.
Anderson, Gertrude,	Manistee, Mich.	McBain, Mabel J.,	Eau Claire, "
Barnes, Etta B.,	Oshkosh, Wis.	McGivern, Zita M.,	N. Fond du Lac, "
Barron, Hazel B.,	Ipswich, S. D.	Minder, Marie C.,	Plato, Minn.
Beckfelt, Carrie J.,	Grand Rapids, Minn.	Miner, J. Pearl,	Ortonville, "
Biklen, Marie B.,	Burlington, Iowa.	Newhouse, Geneva C.,	Spring Grove, "
Binzel, Louise,	Milwaukee, Wis.	Norton, Grace W.,	Spring Green, Wis.
Bonell, Della E.,	Menomonie, "	O'Leary, Florence E.,	Mason City, Ia.
Bonell, Lucy E.,	Menomonie, "	Parker, Ruth Emilie,	Beaver Dam, Wis.
Brown, Vivian M.,	Green Bay, "	Potter, H. Marcia,	Aitkin, Minn.
Bryden, Edna B.,	Duluth, Minn.	Purple, Ruby C.,	Galesville, Wis.
Butz, Ella B.,	Wilmette, Ill.	Rader, Ethel K.,	Boise, Idaho.
Chase, Alice,	Minneapolis, Minn.	Raisler, Viola C.,	Shawano, Wis.
Claycomb, Marjory C.,	Brodhead, Wis.	Randall, Ruth V.,	Brandon, "
Cornish, Maybell E.,	Fort Atkinson, "	Rawlings, Elsa,	Eau Claire, "
Culver, Floris S.,	Eau Claire, "	Reid, Mary Todd,	Beaver Falls, Penn.
Dean, Ethel R.,	Sheboygan, "	Ring, Lillian E.,	Grand Rapids, Minn.
DeBoth, Jessie M.,	Green Bay, "	Ripley, Ava A.,	Minneapolis, "
Dyar, Edna G.,	Rochester, Minn.	Robinson, Nora A.,	Platteville, Wis.
Dyar, Ruth I.,	" "	Russell, Mary A.,	Wausaukee, "
Farness, Lillian I.,	Rice Lake, Wis.	Schaefer, Sophie M.,	Appleton, "
Gallaher, Charlotte T.,	St. Joseph, Mo.	Schuler, Josephine,	Milwaukee, "
Gardner, Teresa,	Milwaukee, Wis.	Sexton, Rose D.,	Ely, Minn.
Gold, Isabel A.,	St. James, Minn.	Sister Fridoline,	La Crosse, Wis.
Groll, Elsa, M.,	Cincinnati, Ohio.	Sister Theophania,	" "
Hales, Winifred J.,	Hallock, Minn.	Solum, Nora O.,	Merrill, "
Hartman, Sadie B.,	Mondovi, Wis.	Spensley, Nelle V.,	Mineral Point, "
Hazelburg, Esther V.,	Rice Lake, "	Spooner, Ida C.,	Spring Valley, "
Hodgkins, Grace O.,	Marquette, Mich.	Stanley, Alice W.,	Minneapolis, Minn.
Horning, Elizabeth F.,	Wauwatosa, Wis.	Stevens, Ruth E.,	" "
Howe, Grace C.,	Boscobel, Wis.	Swan, Edith S.,	St. Paul, "
Jennings, Elizabeth C.,	Albert Lea, Minn.	Taylor, Leone E.,	Manawa, Wis.
Jones, Bessie G.,	Oregon, Ill.	Thompson, Elma O.,	Appleton, Minn.
Jordan, Ruth L.,	Wabash, Ind.	Walker, M. Irene,	Two Harbors, Minn.
Jourdan, Ruby M.,	Evansville, "	Waterbury, Ruth I.,	Augusta, Wis.
Kempter, Cora A.,	La Crosse, Wis.	Wheeler, Alice K.,	Galveston. Tex.
Lantz, Helen C.,	Marinette, "	Wieman, Hester,	Watertown, Wis.
Leedom, Mabel H.,	Dayton, Ohio.	Williams, Nettie C.,	Watertown, S. D.
MacDonald, Mabel L.,	Laurium, Mich.	Wilson, Jessie J.,	Burlington, Wis.
Mackie, Kathryn B.,	Pickett, Wis.	Wilson, Olive A.,	" "
Manning, Blanche,	Economy, Ind.	Winternheimer, Charlotte,	Evansville, Ind.
Madden, Anna,	Aitkin, Minn.	Wolfe, Helen S.,	Beloit, Wis.
Madden, Irene M.,	Castlewood, S. D.	Ziegler, Irma H.,	Cincinnati, Ohio.
Marken, Caroline S.,	Valders, Wis.	zum Brunnen, Daisy M.,	Monroe, Wis.

KINDERGARTEN DEPARTMENT

SENIOR CLASS

Arnold, Hazel,	Sharon, Wis.	Hale, Bessie Van,	Maustin, Wis.
Byrne, M. Ruth,	Sharon, "	Huntsman, Marie A.,	Menominee, Mich.
Decker, Della,	Menomonie, "	Hurlburt, Cora,	Durand, Wis.
Drowatzky, Ella,	Tomah, "	Lewis, Agnes,	Boscobel, "
Egleston, Sadie L.,	Minneapolis, Minn.	Liver, Iva M.,	Independence, "
Fenton, Gwendolyn,	Washburn, Wis.	Maurer, Elsie,	Medford, "
Frautschi, Alice,	Madison, "	Morrison, Ruth,	Rice Lake, "
Grimshaw, Bonnie,	Elroy, "	Neuman, Pearl	Elroy, "

JUNIOR CLASS

Bagley, Lucile A.,	Madison, Wis.	Burrowes, Adelaide,	New Richmond, Wis.
Bensend, Emelia,	Whitehall, "	Curtis, Irene M.,	Madison, "

Devlin, Marvel M.,	Loyal, Wis.	Larson, Hilda J.,	Menomonie, Wis.
Durley, Lucile V.,	Superior, "	Latta, Georgia,	Antigo, "
Fall, Florence,	Hudson, "	Mayer, Velma L.,	Hudson, "
Fruit, Edna Ruth	LaCrosse, "	Mayo, Helen L.,	Minneapolis, Minn.
Fylpaa, Olga,	Star Prairie, "	Rounseville, Odanah,	Antigo, Wis.
Griffith, Helen L.,	Morris, Minn.	Sims, Irma L.,	Brandon, "
Harmon, Florence	Helena, Mont.	Tillisch, Jennie N.,	Merrill, "
Kreutzer, Lilliam M.,	Athens, Wis.	Trowbridge, Bertha,	Mondovi, "
Kreutzer, Nellie H.,	Sturgeon Bay, "	Wells, Catherine E.,	Milbank, S. Dak.

HOME MAKER'S DEPARTMENT

SENIOR CLASS

Dunn, Adelaide,	St. Cloud, Minn.	Niles, Gussie,	Brodhead, Wis.
Isaacson, Enid,	St. Croix, Falls, Wis.	Vidger, Edna	Fargo, N. D.

JUNIOR CLASS

Anderson, Sarah,	Pensaukee, Wis.	Kelley, Loretta M.,	Devils Lake, N. Dak.
Chickering, Mary,	Menomonie, "	Leake, Mabel,	Amboy, Ill.
Dittman, Emma	LaCrosse, "	McCoy, Grace,	New Richmond, Wis.
Haag, Veronica,	St. Paul, Minn.	Orr, Margaret,	Michigan City, Ind.
Hodges, Nell,	Amboy, Ill.	Perkins, Mary C.,	Burlington, Wis.
Hunt, Edenia,	Menomonie, Wis.	Roecker, Mrs. W. F.,	Menomonie, "
Irwin, Ethel C.,	Quincy, Ill.	Walker, Lillian,	Milwaukee, "

TRADE SCHOOL

PLUMBING DEPARTMENT

Anderson, Alvin,	Menomonie, Wis.	Larson, George,	Ironwood, Mich.
Borland, Louis H.,	" "	Marsh, John,	Wabasha, Minn.
Cady, Martin P.,	Spring Valley, Minn.	Morgan, C. C.,	Reedsburg, Wis.
Dawson, Robert,	Warren, Ill.	Raisler, Henry	Shawano, "
Fuchs, Arnold,	Ripon, Wis.	Reader, R. C.,	Pipestone, Minn.
Grogen, George F.,	Rock Island, Ill.	Scott, George H.,	Butte, Mont.
Horsley, Clyde,	Cuba City, Wis.	Steckel, Rudolph,	Menomonie, Wis.
Jones, David,	Tracy, Minn.	Watson, Gilbert D.,	St. Paul, Minn.

BRICKLAYING DEPARTMENT

Schultz, Fred	Menomonie, Wis.

ENROLLMENT BY YEARS

	1903-4	1904-5	1905-6	1906-7	1907-8	1908-9
MANUAL TRAINING.....	3	15	20	27	41	46
DOMESTIC SCIENCE.....	21	36	38	47	65	124
KINDERGARTEN.....	35	31	34	36	35	38
HOME MAKERS.....	..	..	..	..	5	18
PLUMBERS.....	..	..	..	..	..	16
BRICKLAYERS.....	..	..	..	..	..	1
Totals.....	59	82	92	110	146	243

EDITORIAL

SCOPE OF THE BULLETIN

STOUT Institute Bulletin is published quarterly in the interests of school handwork. It is a medium for the discussion of some of the practical and immediate questions relating to the administration of industrial education in the public schools. Problems regarding these subjects are considered from the standpoint of superintendents of schools, teachers of special subjects in public and in private schools, educational workers interested in the school arts and the general public as far as there is a desire to know more of the conduct of these branches in the schools.

STOUT INSTITUTE PUBLICATIONS

CATALOGS descriptive of courses of study in manual training, domestic science, and kindergarten teaching were issued for the school years 1903-4, 1904-5, and 1905-6. The number of inquiries coming to the faculty regarding equipment, supplies, costs, courses of study, methods of teaching industrial subjects, meaning of industrial education, and details of organization and supervision, made it seem desirable to issue a regular publication, and the first number of the Bulletin of the Stout Training Schools was issued February, 1906. Four numbers each year have appeared for the last three years, the name being changed to Stout Institute Bulletin last year when the schools were incorporated as Stout Institute.

The following bulletins have been issued:

February, 1906---Announcement for summer session. Manual training in the grades.

May, 1906---Announcement for the year 1906-7. Domestic science and art in the public schools. Courses of study in manual training, domestic science, and drawing in the public schools.

Angust, 1906---Costs for manual training equipment. An experiment in trade school work. The teacher of manual training. A principle of design. Professional training for special teachers.

November, 1906---Costs of equipment for cooking and sewing. Educacational value of domestic science. Development of industrial education in Menomonie.

February, 1907---A course in machine shop work. Announcement for summer session. Syllabus of course in applications of manual training theory. Devices for the manual training teacher. Directions for making a school pottery kiln. Preparation of clay for class use. Minimum and maximum costs for manual training materials.

May, 1907---Announcement for the year 1907-8. Manual training, domestic science, and drawing courses in the Menomonie schools. Costs of materials for manual training and domestic art.

September, 1907---The model house as a class problem. Furnishing a cottage complete. Housekeeping a profession. The relation of manual training to modern industries. Arts and crafts and manual training. Side lights on student life.

December, 1907---Points at issue in kindergarten thought and practice.

Announcement of kindergarten courses for 1908-9. The point of view in nature study. A decorative scheme for kindergarten rooms.

March, 1908---Announcement for the year 1908-9. Syllabi of courses in the Training School for teachers of manual training and domestic science. Physical training results in Menomonie.

June, 1908---Some needed modifications of the public school system. House decoration and furnishing.

September, 1908---The Stout Training Schools and Stout Institute, retrospective and prospective. Advantages of unifying training courses for kindergarten and primary teachers.

December, 1908---Announcement for summer session. The manual training teacher as an organizer. The supervision of manual training.

The subscription price of the Bulletin is fifty cents per year. Sample copies will be sent on request. As the call for back numbers has greatly exceeded the supply, many of them are now out of print. The attempt will be made however to cover other important problems of detail in industrial education in future numbers.

Besides the Bulletin, Stout Institute issues occasionally separate Circulars of Information. Those published to date are: Announcement of Stout Training School for Home Makers for 1907-8. Announcement for Summer Session, 1908. The Menomonie Schools---two circulars. Announcement of the Trade School for Plumbers and Bricklayers---two circulars.

TO SCHOOL OFFICIALS

The officers of Stout Institute are very glad to give Superintendents and other school officials who are seeking information regarding the organization and development of domestic science and manual training courses in the public schools, any information desired, if in their power to do so. Letters of inquiry are promptly answered, and with pleasure on our part. We may not be able to tell you what you want to know, but we shall do the best we can.

If you are looking for teachers for either of these lines of work, we shall be glad to make recommendations to you if we have, among our graduates, people whose personality and preparation are adapted to your needs. We are not so much interested in finding positions for our students as we are in finding teachers who can do the work you want done. We would rather not recommend a teacher than to recommend one who we have any reason to believe will not be entirely successful. Every such mistake on our part discredits our students and our institution. Our chief business is the training of teachers.

If we can be of service to you in supplying teachers, we shall be glad to render such service. Address all communications regarding the Bulletin or courses of study or qualifications of students to

L. D. HARVEY
President Stout Institute
Menomonie, Wisconsin.

Stout Institute Calendar

1909-1910

Fourth Annual Summer Session begins August 2, 1909

Summer Session ends September 3, 1909

First Semester Seventh Annual Session begins September 13, 1909

First Semester ends January 28, 1910

Second Semester begins January 31, 1910; ends June 10, 1910

Holiday Vacation begins December 18, 1909; ends January 2, 1910

Spring Vacation begins March 26, 1910; ends April 3, 1910